

February 5, 1987

ENVIRONMENTAL AFFAIRS COMMITTEE

C. P. Blahous, Jr., Chairman
R. D. Duncan
R. A. Eberly
W. R. Harris
E. B. Mosier
M. G. Slaney
P. M. King, Secretary

Group and corporate human resources and Carl Myers have been unable to resolve our differing opinions as to whether current practices for maintaining employee medical records are consistent with PPG policies. Therefore, I ask the Environmental Affairs Committee to address the issue.

The Policies

Employee Information Practices Policy 1/27/81

III. C. Medical & Benefit Insurance Records

Extreme care will be exercised in all uses of medical or employee benefit insurance information to make sure that such information is only available to specifically identified individuals on a tightly controlled "need-to-know" basis. The use of medical or employee benefit insurance information will be restricted to efforts to resolve medical/legal issues and to job related decisions where the health, safety or ability to perform of the employee is in question. In such cases (except those involving legal issues), the employee will be notified of the information used and the resulting determination.

Confidentiality of Medical Records 8/4/83

Policy: To ensure completeness of medical information, the continued confidence of our employees, the protection of PPG health professionals, and to provide uniform management of employee medical information, employee medical records shall be maintained in a confidential manner. Company access to relevant medical information shall, however, be provided when legitimate circumstances so warrant. The maintenance of this confidentiality of and access to medical information shall be the responsibility of PPG's Corporate/Divisional management.

Custody of medical records shall be at the facility and under the control of the medical services provider. In locations where there may be no medical service provider, divisional management shall designate an appropriate administrative representative to whom such records shall be entrusted.

All persons, whether or not health care professionals and whether or not company employees, having responsibility for the custody and/or control of employee medical information, shall maintain and protect the confidentiality of this information.

The Debate

Some groups have maintained that even where there is a "medical services provider" the Human Resources Department is better able to maintain such records; there is a need for a standard procedure at all locations; we don't want to burden nurses with clerical duties; there is a need to access records to contain costs; therefore, such records should be maintained by Human Resources personnel.

The Concerns

First, some of us have felt that unless the records were maintained and accessed by medical personnel we run the risk of medical interpretation by laymen and the potential abuse of unrestricted access. Second, since present practice is not consistent with the policies then we ought to comply or change the policies.

Recommendation

I am sympathetic to the need to simplify the administrative processes of maintaining and accessing confidential records. I am also sensitive to the fundamental concern for employee privacy that led to our first issuance of the Employee Information Practices Policy in 1979.

To resolve the present impasse, I suggest the following:

1. Assign record keeping to medical services providers or to a Human Resources staff person.
2. Clearly identify the responsibility of that person to maintain the confidentiality and access on a need-to-know basis.
3. Maintain an access log.

4. In all cases where access is not by medical personnel or in cases involving legal issues, comply with the Employee Information Practices Policy by advising the employee of the information access, by whom, and the determination resulting from such access.
5. Compliance during medical audits will be determined basically from the quality of the log maintained.

Let's see if we can resolve this during the Environmental Affairs Committee meeting tomorrow.

A handwritten signature in dark ink, appearing to read 'R. B. Parran', with a stylized flourish at the end.

R. B. Parran

cc: C. B. Myers

A C C E S S T O M E D I C A L R E C O R D S

3.7.2 -- GUIDELINES FOR IMPLEMENTATION

FILE COPY

INTER-OFFICE CORRESPONDENCE

Date: 10 February 1987

From: J. C. Delgado, Jr.

Location: 36 West

Subject: Confidentiality of
Medical Records
Implementation Plan

To: Distribution

Attached is a copy of an implementation plan for the corporate Confidentiality of Medical Records Procedure. This procedure has been approved by Dr. Myers. Please place this in the Corporate Procedures section of the Occupational Health and Industrial Hygiene Manual.

If there are any questions, please call.



Distribution:
Roland Olmstead
Walt Treybig
Jon Shepard/Murray Davis
Ron Williams
Steve Hanna
Ken Isakson
Ed Rish
John Farrah
Eric Denman
Mike Clark
Marshall Hamilton
Dr. Carl Myers

CONFIDENTIALITY OF MEDICAL RECORDS

CHEMICALS GROUP IMPLEMENTATION PLAN

1. Medical records will be kept in the medical facility under separate lock, with no duplicate keys and under the custody/control of the Medical Services Providers. The job descriptions of these medical services providers will list confidentiality as a responsibility and accountability. Where no medical facility exists, medical records will be kept in a separate locked file with no duplicate key, completely separate and independent of any other employee records. The individuals charged with the custody of these records will have the responsibility and accountability to maintain the confidentiality of these records, and this will be added to their job descriptions.
2. Medical information will be provided to personnel with a legitimate need to know and to legitimate outside medical personnel in certain form(s) by the individual(s) with a job description accountability to maintain this confidentiality. This information will contain specific facts which will enable them to adequately perform their job function.
3. Medical records will not be released from the custody and/or control of the individual charged with maintaining this confidentiality (the Medical Services Provider or the appointed individual as in Item 1) to anyone, including legitimate outside medical personnel, unless there is a signed consent form from the employee authorizing this release.

Medical records, once PPG has been named as the defendant, may be accessed by those company representatives who, on a need-to-know basis, require such access in order to protect the assets of the company. This includes those individuals who represent the company in grievances, arbitrations, EEO charges, wrongful discharge litigation, etc. This does not imply that persons outside the Medical Department have unlimited access to medical records. Information in the medical file which clearly does not involve any issues related to the case in question may be removed from the medical record before the file is viewed by the company representatives.

4. Medical records accessed through OSHA regulations, "Access to Employee Exposure and Medical Records" (CFR 1910.20), will follow that appropriate procedure.
5. Medical records will out of necessity, have to be copied to satisfy Items 3 and 4 above. Those persons who need information to provide an adequate defense of the assets of the corporation will receive copies of the appropriate documents. The original medical records will be maintained by the Medical Services Provider or the individual charged with that accountability.

These guidelines will be implemented and practiced in a manner which will fully protect the interests of the company and currently respect the legal, moral, and ethical rights of the Medical Services Provider and the employees.

PPG

Inter-Office Correspondence

TO: Marlene Gifford

DATE: June 19, 1989

FROM: J. A. Barter

SUBJECT: Employee Health
Records

Your memo of June 5, 1989 raised some questions dealing with different aspects of employee health records. The following information provides both general and specific guidance on these issues.

One question concerned whether the x-rays of a transferred employee should be retained at the location from which the person is transferring or should be sent to the new location. X-rays are an integral part of an employee medical record. Therefore, when an employee is transferred to a new location (either within Chemicals' or to another PPG group) that person's medical records, including x-rays, must be sent to the custodian of medical records at the employee's new location. It should be the responsibility of the custodian of medical records at the new location to request the medical records of the transferred employee. When such transfers of medical records occur, documentation establishing a trail of custody must be utilized.

A second set of issues concerned the transfer of records for the R&D employees who are transferring from the Barberton Technical Center (BTC) to the new Technical Center location at Monroeville. Apparently there will be adequate space at the Monroeville facility for long term retention of these records. The medical records, including x-rays, for all of the people who will be transferring should be sent to the custodian of medical records at the new facility at the time when the employee is actually transferring. Additionally, the medical records of all separated and terminated BTC R&D employees should be sent to the custodian of medical records at Monroeville for retention for the appropriate time period, per the retention manual. The medical records for retired BTC R&D employees will be retained at the Barberton Plant. At the present time, neither the HR person nor the person who will have the accountability as custodian of medical records at the Monroeville facility have been designated. Until these appointments are made, you will remain the custodian of these records. With the above guidance, you should be able to begin assembling and packing these records. This should provide an ideal opportunity to review these records against the requirements of the medical records retention policy and discard those which no longer must be retained. It would be best if the records could be retained at

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Barberton after packing until the time when the actual relocation occurs. If this is not possible, the records could probably be stored for a short period of time in the mine where other PPG records are kept. However, this would require moving all of this material twice and would seem a far less desirable option. In any event, documentation establishing a trail of custody for transfer of these medical records should be developed.



J. A. Barter

cc: R. G. Corley
G. L. Sellers
W. B. Kennedy
W. B. Graybill

jabmar13
9-10

SL 071498

9/88

5 2 1

Carl B. Myers' comments on medical retention to be added to the
Records Retention Manual

Flouley

MEDICAL RECORDS

Pre-employment - not hired - two years

Separations and Retirements - no surveillance (medical monitoring)
7 years

Separations and Retirements - on or had been on required
(Regulatory) surveillance (medical monitoring) duration of lifetime
plus 30 years.

Medical Surveillance - lifetime of employee plus 30 years.

X-RAYS

Chest X-rays required by standard - original (no microfilming
permitted) lifetime of employee plus 30 years (includes written
report).

X-rays other than required by standard - 7 years

*First Aid Logs - should be discarded these at the end of
The year.*

9/88

504

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Records Retention Manual

Flouley

MEDICAL RECORDS

Pre-employment - not hired - two years

Separations and Retirements - no surveillance (medical monitoring)
5 1/2 years

Separations and Retirements - on or had been on required
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Medical Surveillance - lifetime of employee plus 30 years.

X-RAYS

Chest X-rays required by standard - original (no microfilming
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X-rays other than required by standard - 7 years

First Aid Logs - should be discarded then at the end of
the year.

PPG INDUSTRIES, INC.

INTEROFFICE CORRESPONDENCE

TO: Jim Barter

1989
DATE: September 13, 1989

FROM: Marlene Gifford

LOCATION: Barberton

SUBJECT: Employee Health
Records

The following steps have been implemented with regard to the Barberton facility, both Plant and Technical, on the guidelines issued by yourself in your memo of June 19 on employee health records.

All the BTC medical records have been reviewed against the medical records retention policy requirements. All BTC active employees medical records including x-rays, as well as those separated and terminated since 1982, were sent to the custodian at Monroeville September 7th via the moving company. The acting custodian at the Monroeville facility is Allison Power, Personnel/Safety Supervisor. I am retaining all BTC retired medical records at this facility as required by the retention policy.

I also sent all previously transferred employees x-rays to the appropriate custodian at the facilities and have established a trail of custody indicating the same.

Another part of record retention clean up was the sale of all retention expired x-rays to AgHog/Pittsburgh Co., Inc. who will recover the silver from these films at the prices quoted as follows: BMX pre-76 \$.73, CMX 77-79 \$.57 and NMX 1980 and up \$.30 per pound and will continue to pick up x-rays annually on all retention expired x-rays.

After achieving all of the above, the only items remaining in my records room (aside from those being maintained for retention) are those items mentioned in my August 8th memo which I plan on disposing of on October 2nd unless I hear from you, as they don't qualify for retention.

Thanks for your continued help.

Marlene

mhg

cc: D. Angell
S. Hanna
G. Sellers
file

SL 071501

ALCOHOL, DRUGS AND OTHER INTOXICANTS

POLICY

PPG INDUSTRIES, INC.

February 7, 1986

The abuse of intoxicants by employees can have an adverse influence on safe and efficient performance. Employees who abuse the use of intoxicants may endanger themselves, their co-workers, or members of their community. Intoxicant abuse can negatively affect productivity, the quality of products, and service to the customer.

The term "intoxicants" includes intoxicating beverages, such as alcohol, controlled substances and any potentially mind-altering chemicals of any kind, including but not limited to illegal drugs; depressants (barbiturates); stimulants (amphetamines); cocaine, narcotics (opiates, such as heroin, morphine and codeine); methadone; marijuana, and any other cannabinoid (e.g., hashish); hallucinogens (PCP); legally obtainable drugs which have not been legally obtained and/or are being abused (darvon, valium, librium and quaaludes); and prescription or over-the-counter drugs which have actual or potential mind- or performance-altering effects and which have not been declared to management at the time of testing. Also encompassed by this definition are substances not sold as drugs or medicine but used for mind- or performance-altering effect.

The purpose of this Policy is to describe the Company's attitude with respect to intoxicants including alcohol and to establish the parameters for screening employees and/or applicants for use of intoxicants.

ALCOHOL

When an employee's use of alcohol interferes with effective and safe job performance, this otherwise personal activity becomes a matter of Company concern.

If an employee is under the influence of alcohol while on Company premises, severe disciplinary action up to and including discharge will be considered. The unauthorized possession or use of alcohol while on Company premises will cause an employee to be subject to discharge.

Alcohol abuse is a behavioral/medical problem and chronic alcoholism is recognized generally as an illness. As such, company medical insurance programs provide coverage for the treatment of alcoholism when proper medical documentation exists. One distinguishing

characteristic of chronic alcoholism from other diseases is that whether an individual drinks or does not drink is under the control of his or her will. The Company will encourage appropriate treatment when an employee has recognized a need and resolved to seek assistance.

A decision to terminate employment in cases of alcohol abuse may be postponed while other solutions are being actively sought and implemented; but a decision to terminate may be made if management has determined that the employee has failed to return to satisfactory job performance and:

1. Treatment modalities have been unsuccessful; or
2. The employee refuses to obtain medical and/or other assistance in coping with a problem of alcohol abuse.

Management has concomitant obligations to protect the safety and health of other employees and to safeguard Company property. These obligations may require an employee to be placed on unpaid leave or disciplinary layoff as an interim solution until treatment is effected.

DRUGS AND OTHER INTOXICANTS

The use of intoxicants other than alcohol occurs within a framework of social and medical attitudes and legal restrictions. The position of PPG Industries regarding employee involvement with these intoxicants is based on three fundamental points:

1. The Company is concerned with use of any substance which interferes with efficient and safe performance of the employee's job.
2. The Company cannot condone illegal activities on its property by its employees. The sale, purchase, use or possession of certain drugs is illegal under federal and state laws.
3. The Company has the desire in the area of drug and other intoxicant abuse to assist affected employees whenever possible in securing appropriate treatment so they can remain productively employed or return to productive employment.

PPG Industries' actions in cases of employee use of intoxicants other than alcohol will depend on the facts of individual cases as they relate to the above stated points. An employee who engages in these prohibited activities on Company property will be subject to discharge. Also, should an employee be convicted on charges of illegal drug activity, his or her employment may be terminated.

The improper use, sale, purchase, transfer, or possession of intoxicants other than alcohol on Company property (which includes the facility, parking lots, and equipment, such as Company-owned vehicles used away from Company property) is prohibited. Such improper use, sale, purchase, transfer, or possession is considered misconduct and will result in disciplinary action including discharge.

Reporting to work or being "on the job" under the influence of an intoxicant or intoxicants to the extent that performance is negatively affected is also misconduct and will result in disciplinary action including discharge.

The impact of drug usage on health and behavior may cause poor or unsafe job performance. Since health and work effectiveness are interrelated, the Company will encourage appropriate treatment when an employee has recognized such a need and has resolved to seek assistance. A decision to terminate employment in case of drug usage may be postponed while other solutions are being actively sought and implemented, but such a decision may be made if management has determined that the employee has failed to return to satisfactory job performance and:

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INTOXICANT SCREENING

This Policy provides for the testing of employees and/or applicants for use of an intoxicant or intoxicants under four different circumstances: Pre-employment, Reasonable Belief, Job Required, and Random Sampling. Each facility or function must determine which application or applications are appropriate for its circumstances and secure the written approval of the Group Vice President responsible for operations of that function or facility including the General Office. In the case of the General Office, the Vice Chairman shall be the approving authority.

All employees and/or applicants for employment will be given advance notice that a facility or function has adopted an intoxicant screening policy and that the Company intends to perform screenings. Regardless of which type(s) of screening initially approved for a facility or function, such notice should make it clear that the Company reserves the right to perform all types of screenings in the future. The actual conduct of the screening and its results will be confidential.

GUIDELINES FOR THE
IMPLEMENTATION OF INTOXICANT SCREENING
PPG INDUSTRIES, INC.

May 15, 1986

Approval

No facility or function shall implement any intoxicant screening program without approval. Intoxicant screening will not be included as a part of any other approved medical surveillance program unless approved in accordance with the Alcohol, Drugs and Other Intoxicants Policy and implemented as provided herein.

All facilities and functions shall implement the intoxicant screening policy and program under the following circumstances:

1. Pre-employment -- Applicants who do not pass an intoxicant screening are poor employment risks and as such will be excluded from employment.
2. Reasonable Belief -- An intoxicant screening will be performed when it is reasonably believed that an employee is violating the Alcohol, Drugs, and Other Intoxicants Policy; that an employee's work performance is adversely affected by use of an intoxicant or intoxicants; or where an incident such as an accident, an altercation, or unusual behavior occurs which may have resulted from use of an intoxicant or intoxicants. Such a screening may also be used when an employee currently undergoing rehabilitation from intoxicant abuse is believed to have violated the terms of rehabilitation.
3. Job Required -- The very nature of some jobs and the risks inherent in their improper performance dictate that occupants not be adversely affected by the use of intoxicants. Examples might include aircraft crew members and mechanics, over-the-road vehicle operators, operators of dangerous equipment, operators of potentially hazardous product or by-product processes, or other positions that can be demonstrated to present a significant loss potential to the individual, other employees, the public or the Company.
4. A facility or function may request approval from the appropriate Group Vice President (or the Vice Chairman, in the case of the General Office) to implement random sampling when it is determined to be in the best interest of the Company and its employees to conduct unannounced testing of employees.

Notification of Screening Policy

All employees and/or applicants for employment will be notified in advance of the facility's intoxicant screening policy.

Applicants will be notified by using a letter to applicants; by posting a notice prominently in the applicant processing area; and/or including such notice on the Application for Employment. Prior to the actual screening, each applicant will be required to complete and sign a form which:

1. Acknowledges that notice of intoxicant screening was provided;
2. Acknowledges consent by the applicant to be screened for intoxicants;
3. Declares any intoxicants currently used or used within the preceding thirty days; and
4. States that employment will be denied if any illegal or undeclared intoxicant is detected during the screening.

This form will be executed and maintained as a part of the pre-employment physical examination procedure. As such, the requirements for confidentiality are the same as any other medical record.

When a facility or function has received approval to screen employees, a facility-wide or function-wide notice will be provided in a manner consistent with other policy notices. Such notice will include these points:

1. The nature of the screening (i.e., reasonable belief, job required or random sampling) and that the Company reserves the right to perform other types of screening.
2. The reasons screening was implemented.
3. The prohibition of improper use, sale, purchase, transfer or possession of intoxicants on company property and the prohibition of reporting to work or being on the job under the influence of intoxicants shall be restated.
4. The disciplinary action that will result since violation is considered misconduct.
5. Certain jobs, because of their nature, will require testing of occupants. Failure to pass an intoxicant screening will result in disciplinary action and/or disqualification from the job.

6. No employee can be forced to submit to an intoxicant screening. Failure to submit to a screening shall be a rebuttable presumption that an intoxicant was used and may result in disqualification and/or disciplinary action.
7. Those screened will be required to declare intoxicants currently used and those used within the preceding thirty days.
8. An explanation of rehabilitation programs available to employees.

Prior to actual screening, each employee will be required to complete and sign a form which:

1. Acknowledges that notice of intoxicant screening was provided;
2. Acknowledges consent by the applicant to be screened for intoxicants; and
3. Declares any intoxicants currently used or used within the preceding thirty days.

Those facilities or functions which have Employee Handbooks and receive approval for screening should also include notice of screening in the Handbook.

Confidentiality

It is imperative that confidentiality be maintained when an intoxicant screening program is utilized. All records, results, and opinions resulting from a screening program will be private and are subject to the Confidentiality of Medical Records Policy.

Methodology

The integrity of an intoxicant screening program is critical to its acceptance by employees and the public and its ability to withstand intense technical, medical, and legal scrutiny. Procedures must be the most definitive available.

The Corporate Medical Director shall establish the standards for selection of a testing laboratory, the methodology for collection, types of levels of intoxicants for which the screening is to be conducted, sampling protocol, and standards for maintaining the quality of the laboratory services. No laboratory will be utilized without the approval of the Corporate Medical Director.

Appropriate biological specimens will be collected by a facility's physician or registered nurse. A "chain of custody" procedure will be established and implemented to collect, identify, and prepare the specimen for transmittal to the laboratory for testing. A specimen will be collected in such a way to insure it is not contaminated and is properly identified. In those cases where a facility does not have a physician or registered nurse on site, alternate arrangements for collection will be made in consultation with and subject to the approval of the Corporate Medical Director.

Re-testing

If any employee or applicant challenges the accuracy of the test results, another screening of a stored portion of the biological specimen will be made. If such second screen is negative, then the first screening results will be ignored and usage will be presumed not to have occurred.

Disciplinary Action

Disciplinary action for use of intoxicants which has been defined as misconduct will be consistent with the established disciplinary policy of the facility or function.

ALCOHOL, DRUGS AND OTHER INTOXICANTS

POLICY

PPG INDUSTRIES, INC.

February 7, 1986

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The term "intoxicants" includes intoxicating beverages, such as alcohol, controlled substances and any potentially mind-altering chemicals of any kind, including but not limited to illegal drugs; depressants (barbiturates); stimulants (amphetamines); cocaine, narcotics (opiates, such as heroin, morphine and codeine); methadone; marijuana, and any other cannabinoid (e.g., hashish); hallucinogens (PCP); legally obtainable drugs which have not been legally obtained and/or are being abused (darvon, valium, librium and quaaludes); and prescription or over-the-counter drugs which have actual or potential mind- or performance-altering effects and which have not been declared to management at the time of testing. Also encompassed by this definition are substances not sold as drugs or medicine but used for mind- or performance-altering effect.

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characteristic of chronic alcoholism from other diseases is that whether an individual drinks or does not drink is under the control of his or her will. The Company will encourage appropriate treatment when an employee has recognized a need and resolved to seek assistance.

A decision to terminate employment in cases of alcohol abuse may be postponed while other solutions are being actively sought and implemented; but a decision to terminate may be made if management has determined that the employee has failed to return to satisfactory job performance and:

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3. Job Required -- The very nature of some jobs and the risks inherent in their improper performance dictate that occupants not be adversely affected by the use of intoxicants. Examples might include aircraft crew members and mechanics, over-the-road vehicle operators, operators of dangerous equipment, operators of potentially hazardous product or by-product processes, or other positions that can be demonstrated to present a significant loss potential to the individual, other employees, the public or the Company.
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4. The disciplinary action that will result since violation is considered misconduct.
5. Certain jobs, because of their nature, will require testing of occupants. Failure to pass an intoxicant screening will result in disciplinary action and/or disqualification from the job.

6. No employee can be forced to submit to an intoxicant screening. Failure to submit to a screening shall be a rebuttable presumption that an intoxicant was used and may result in disqualification and/or disciplinary action.
7. Those screened will be required to declare intoxicants currently used and those used within the preceding thirty days.
8. An explanation of rehabilitation programs available to employees.

Prior to actual screening, each employee will be required to complete and sign a form which:

1. Acknowledges that notice of intoxicant screening was provided;
2. Acknowledges consent by the applicant to be screened for intoxicants; and
3. Declares any intoxicants currently used or used within the preceding thirty days.

Those facilities or functions which have Employee Handbooks and receive approval for screening should also include notice of screening in the Handbook.

Confidentiality

It is imperative that confidentiality be maintained when an intoxicant screening program is utilized. All records, results, and opinions resulting from a screening program will be private and are subject to the Confidentiality of Medical Records Policy.

Methodology

The integrity of an intoxicant screening program is critical to its acceptance by employees and the public and its ability to withstand intense technical, medical, and legal scrutiny. Procedures must be the most definitive available.

The Corporate Medical Director shall establish the standards for selection of a testing laboratory, the methodology for collection, types of levels of intoxicants for which the screening is to be conducted, sampling protocol, and standards for maintaining the quality of the laboratory services. No laboratory will be utilized without the approval of the Corporate Medical Director.

Appropriate biological specimens will be collected by a facility's physician or registered nurse. A "chain of custody" procedure will be established and implemented to collect, identify, and prepare the specimen for transmittal to the laboratory for testing. A specimen will be collected in such a way to insure it is not contaminated and is properly identified. In those cases where a facility does not have a physician or registered nurse on site, alternate arrangements for collection will be made in consultation with and subject to the approval of the Corporate Medical Director.

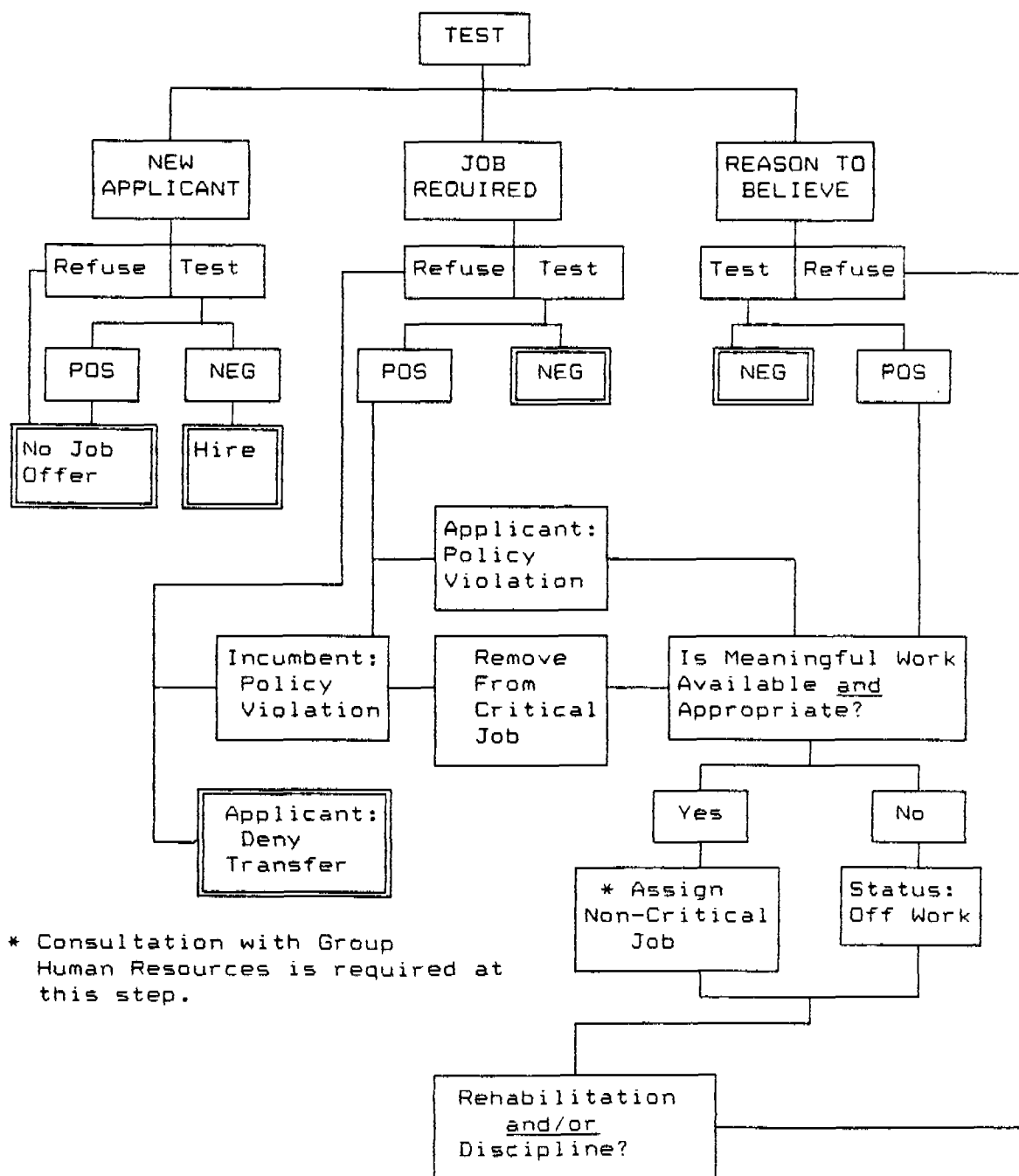
Retesting

If any employee or applicant challenges the accuracy of the test results, another screening of a stored portion of the biological specimen will be made. If such second screen is negative, then the first screening results will be ignored and usage will be presumed not to have occurred.

Disciplinary Action

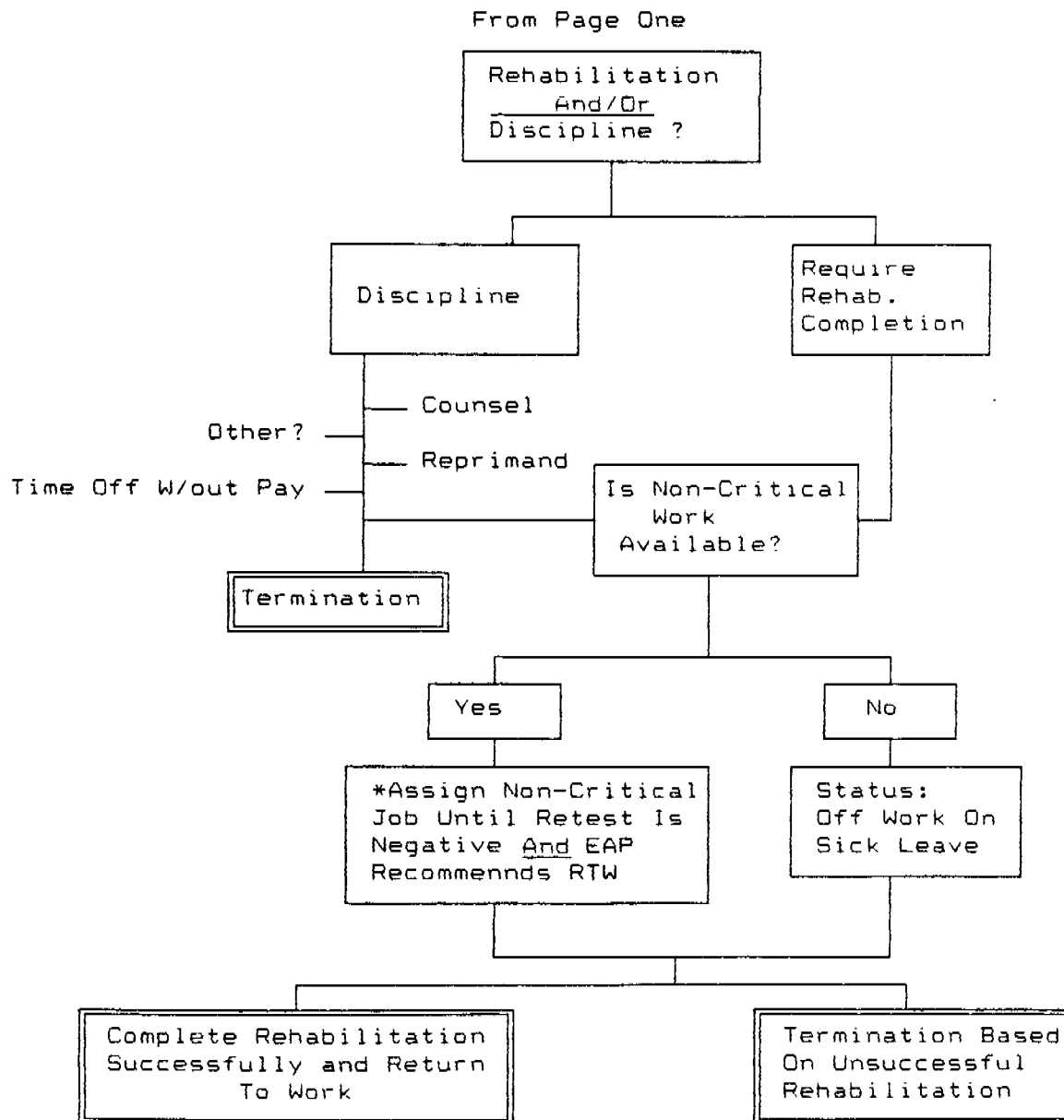
Disciplinary action for use of intoxicants which has been defined as misconduct will be consistent with the established disciplinary policy of the facility or function.

PPG Drug, Alcohol, and Other Intoxicants Policy
Personnel Administration Decision Tree



* Consultation with Group Human Resources is required at this step.

See Page Two



* Consultation with Group Human Resources is required at this step.

RGC 7/14/88
DECTREE.DRG

SL 071517

FILE

Inter-Office Correspondence

JAB

TO: D. C. Angell
C. W. Bellon
T. G. Brown
T. R. Casey
J. Denison
R. E. Eakin
J. Flister
R. G. Kramer
P. Malloy
S. S. McIntosh
H. Neeley
C. P. Novotny
E. G. Ramirez
S. Reid
J. Roach
G. L. Sellers

DATE: December 14, 1988
FROM: R. E. Williams
LOC: 36 South
SUBJECT: Return to Work for
Drug Test Positives

The question of appropriate job assignments for those employees who tested positive under the Drug Policy has been given careful review. The concern is for an employee who has not been "cleared" by a negative test result but is assigned a job that could become involved in an accident or other serious incident.

This situation will arise relatively rarely, where we want to place the employee on the job before the negative test result is obtained. In such situations, Group Management has required that the assignment be reviewed and approved in advance. I have designated Roger Corley as the contact for this review and made him responsible for involving legal or other functions as necessary.

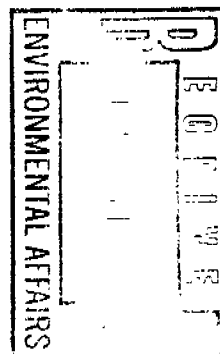
Please submit each case in a manner so as to allow the necessary time for this review. This review will be considered as a part of the Drug, Alcohol and Other Intoxicants Policy for the Chemicals Group.

R. E. Williams

/bbw

cc: A. G. Baker
D. W. Bogus
R. R. Burton
J. Cafaro
P. M. Chakrabarti
D. B. Church
J. R. Farst

✓ W. B. Graybill
D. W. Kiener
R. B. Leggett
G. M. Miller
H. I. Roe
R. M. Rompala
R. G. Corley



Hazard Communication

4.1 -- CHEMICALS' IMPLEMENTATION PLAN

HAZARD COMMUNICATION COMPLIANCE

TABLE OF CONTENTS

- I. Compliance Plan
 - A. General
 - B. Plant Plan
- II. Plant Hazardous Chemical List
- III. Appendix A
 - A-1. PPG Health and Safety Index System
 - A-2. Chemicals' Hazard Index System Data Summary Sheet
- IV. Appendix B
 - B-1. Internal Material Safety Data System Microfiche Indexing
 - B-2. Directions For Accessing MSDS System
 - B-3. Directions For Printing HIT Sheets
 - B-4. Directions For Printing Labels
- V. Appendix C
 - Responsibility Index
- VI. Appendix D
 - General Guidelines For the Development of Precautionary Labels and MSDSs
- VII. Appendix E
 - E-1. Delinquent MSDS Policy
 - E-2. Acquisition Letters
- VIII. Appendix F
 - F-1. HIT Table Policy
 - F-2. Example of HIT Table
 - F-3. Glove Identifier
- IX. Appendix G
 - Training Format

HAZARD COMMUNICATIONS COMPLIANCE

I. PURPOSE

The purpose of this program is to assure compliance with the OSHA Hazard Communications Standard. This will be done by starting the program and issuing guidelines to operating units.

II. SCOPE

Chemicals Covered: All chemicals (elements, compounds, and mixtures) to which employees may be exposed in the workplace under normal conditions of use or in a foreseeable emergency are included under the OSHA Hazard Communication Standard.

Chemicals Exempt: Chemicals exempt from the standard are hazardous wastes regulated by the EPA, tobacco, wood, items intended for personal consumption by employees and articles. "Articles" are defined as manufactured items of specific shape which do not result in exposure to hazardous chemicals under normal use. Also exempt are chemicals which are produced and used only in a manufacturing facility's laboratory.

Laboratories: Laboratories are covered to the following extent:

- Labels on incoming containers of hazardous materials must not be removed nor defaced.
- Laboratories must maintain any MSDSs which are received from the manufacturer and ensure that they are readily available to lab employees.
- All training requirements under the standard must be met.

Deadlines: The deadline for making a hazard determination for chemicals shipped out of the workplace is November 25, 1985. The deadline for making hazard determinations for chemicals not shipped out of the plant is May 25, 1986.

Hazardous Chemical Definition: A hazardous chemical is one which is recognized as a physical or health hazard. A physical hazard must be represented by scientific evidence that the material is a combustible liquid, a compressed gas, explosive, flammable, or an organic peroxide, an oxidizer, pyrophoric, unstable (reactive), or water reactive.

A health hazard is any material where there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees.

Hazard Determination: Each chemical produced in the workplace or imported shall be evaluated for its potential to cause adverse health effects, as well as its physical hazard potential.

The standard deems hazardous those chemicals appearing on one or more of the following lists:

- OSHA's Health Standards (29CFR 1910, Subpart Z).
- ACGIH TLV Publication
- Latest NTP Annual Report
- Latest editions of monographs (published by IARC)

Those chemicals regulated by OSHA as carcinogens and those listed on the latest NTP annual report or the IARC monographs as carcinogens must be accepted as carcinogens.

A hazard evaluation must be conducted on chemicals which are not present on any of the above lists. Chemicals which meet any of the following definitions are health hazards:

Corrosive: A chemical that causes destruction of or irreversible alteration in living tissue by chemical action at the site of contact.

Highly Toxic: A chemical meeting any of the following categories:

- Oral LD₅₀ of 50 mg/kg or less in albino rats weighing between 200 and 300 grams.
- Dermal LD₅₀ of 200 mg/kg or less in albino rabbits weighing between 2 and 3 kilograms.
- One hour LC₅₀ of 200 ppm (vapor or gas) or 2 mg/liter (mist, fume, or dust) for albino rats weighing between 200 and 300 grams.

Irritant: A chemical which causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

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

Toxic: A chemical meeting any of the following categories:

- Oral LD₅₀ > 50 mg/kg and ≤ 500 mg/kg in albino rats.
- Dermal LD₅₀ > 200 mg/kg and ≤ 1,000 mg/kg in albino rabbits.
- LC₅₀ > 200 ppm and ≤ 2,000 ppm for vapors and gases and > 2 mg/liter and ≤ 20 mg/liter for mists, fumes, and dusts in albino rats.

Mixtures: If a mixture has been tested as a whole for hazards, those results may be used to determine the mixture's hazards. If the mixture has not been tested as a whole, the person making the hazard determination may use whatever scientifically valid information is available, if any, to determine the mixture's physical hazards. The standard irrebutally presumes the health hazards of an untested mixture to be those of the hazardous chemicals present in the mixtures in concentrations of 1.0% or greater (by weight or volume). An untested mixture is irrebutally presumed to present a risk of cancer if it contains a component deemed by the standard to be a carcinogen in a concentration of 0.1% or more. If a component present in the mixture in concentrations of less than 1 percent could be released in concentrations which would exceed the PEL or TLV or could present a health hazard, the mixture shall be assumed to present the same hazard.

Hazardous Chemicals List: All chemicals in the workplace must be evaluated according to the aforementioned guides. Those found to be hazardous must be added to the hazardous chemical list for the work area. This list must be forwarded to the plant health and safety department for assigning hazard warning information. Environmental Affairs will assist the plant health and safety department in this endeavor.

III. HAZARD EVALUATION/COMMUNICATION

A hazard determination for all chemicals made and/or used in the workplace must be made. This hazard determination must be performed to determine if the chemical meets any of the criteria listed for a hazardous chemical (Section II).

A. Material Safety Data Sheets (MSDS)

A MSDS must be made for all chemicals that have been judged to be hazardous that leave the plant. A MSDS must be obtained or made for all chemicals that have been judged by the standard (Section I) as hazardous and are used in the workplace. These MSDSs must contain:

1. The specific chemical identity and other names. If a mixture, its components which contribute to the hazard of the mixture (as determined through testing or through presumptions discussed in Section II).
2. The physical and chemical characteristics.
3. Its physical hazards.
4. Its health hazards, including signs and symptoms of exposure and any medical conditions generally recognized as being aggravated by exposure to the chemical.

5. Primary routes of exposure.
6. OSHA PEL, ACGIH TLV, other usable exposure limits (PPG IPELs).
7. Whether it is deemed by the standard to be carcinogenic (Section II).
8. Any generally applicable precautions for safe handling and use.
9. Any generally applicable control measures.
10. Emergency and first-aid procedures.
11. Date of preparation or latest revision.
12. Name, address, and telephone number of the responsible party who can supply information on the chemical and appropriate emergency procedures.

B. MSDS File

An MSDS must be available for all chemicals that are judged hazardous by this standard (Section II). In addition to being used in training, these documents must be available at all times to the employee in the work place. For larger plants with several work areas, control rooms, etc., MSDSs may either be hard copy or computerized. Where a CRT with communications to PPG's main frame computer is available in the control room, a hard copy MSDS file will not need to be maintained.

C. Obtaining MSDSs

The Chemicals' MSDS Computer Program should be used to assure that MSDSs are obtained and maintained in a current state. Appendix B should be reviewed for details on this system.

D. Labeling

All containers of chemicals that have been judged by this standard (Section II) to be hazardous must carry an appropriate label. Exempted containers include pipes and containers into which hazardous chemicals are transferred for use during the work shift.

Labels must contain:

1. Chemical names.
2. Appropriate hazard warnings (to include what is required by OSHA on other standards).

3. Containers leaving the workplace must contain the following additional information.
 - Name and address of the responsible party to be contacted for additional information.
 - No information that is in conflict with DOT hazard labeling requirements.

In-plant stationary containers, such as storage tanks and reactor vessels, may have as their labels items such as batch tickets, process sheets, or operating procedures.

Labels used on hazardous chemicals used in each work area will use a four index hazard code accompanied by a complete textual description to convey appropriate hazard warnings. Labels will cover known health hazards, flammability, reactivity, and appropriate personal protective equipment. See Appendix A.

V. TRAINING/INFORMATION

PPG must assure that all employees are trained in the hazards of the chemicals in their specific workplace. This training must consist of the following:

Information:

1. Explanation of the training requirements of this standard.
2. Review of the operations in area where hazardous chemicals are present.
3. The location and availability of the written hazard communication program, including the list of chemicals and MSDSs.

Training:

1. Methods (such as monitoring) that may be used to detect the presence of hazardous chemicals in the workplace.
2. The physical and health hazards of the chemical in the area.
3. The measures that employees must take to protect themselves from these hazards.
4. The details of the hazard communication program to include the labeling system.
5. How to use the MSDS file.

VI. INSTRUCTIONS FOR COMPLYING WITH PPG PROGRAM

A. Hazardous Chemicals List (Inventory)

Someone in each work area must be assigned the job of making a chemical materials inventory for that respective area. This person must be familiar with the area, to include the process or work that is performed in these areas.

Work areas are defined as process units, maintenance shops, storage/warehousing areas and laboratories.

Chemicals do not fall under the provisions of this program if they fit all three following constraints:

1. If they are purchased in quantities of less than one quart.
2. If they may be purchased "across the counter" for consumer use.
3. If they are recognized as having low toxicity and are widely purchased for household use.

Chemical inventory items include chemicals such as the following:

1. All purchased substances, raw materials, catalysts, catalyst support materials, process additives, compressed gases, water compounds, and pesticides.
2. Products, by-products, process intermediates.
3. Contents of waste streams, product impurities, and product additives known to be in concentrations exceeding 1% of the mixture.
4. Maintenance materials such as insulation materials, adhesives, resin type compounds, polyurethanes, abrasives, welding materials, cutting oils, lubricants, paints and other coatings, cleaners and degreasers, etc.

B. Hazard Determination

Once the materials inventory has been completed, it must be forwarded to the plant Health and Safety Department. Environmental Affairs and the plant Health and Safety Department will perform a hazard determination on each of these chemicals. A list of the chemicals defined as hazardous will be forwarded to Environmental Affairs.

C. Hazard Code and Labels

Environmental Affairs will verify the list of hazardous chemicals, will evaluate the hazards of the materials and assign hazard codes to convey appropriate hazard warnings, where warranted.

All hazard codes necessary for labeling will be entered into the MSDS computer file and labeling information may be accessed either on-line via a CRT or a hard copy printout generated. Labels generated from the hazard codes will consist of a four section hazard code covering health, flammability, reactivity and personal protection followed by an appropriate textual description of the protective equipment to be used when direct contact is expected, the consequences of direct eye or skin contact, summaries of the known acute and chronic toxicity (to include potential carcinogenicity), as well as the flammability and reactivity hazard.

Labels must be affixed to all raw material containers that are unlabeled or that have been judged as having insufficient labeling.

Fixed process vessels such as reactors, storage vessels, process columns, etc. must be clearly identified and labeled with a unique equipment identification table (HIT) for use in each work area. This table is to be readily accessible to all employees so that they may determine what materials are present in specific vessels as may be deemed necessary. Once the contents are known, the employee may then refer to the appropriate labels (described above) or MSDSs for each of the materials present. This information may be present either in hard copy form or computer accessible. The MSDS computer program has the capability of storing HIT information and generating hard copy HIT lists. See Appendix F.

Sample containers must also be labeled. The source of the sample must be included on the label (or tag), along with a warning statement and the source of additional information (originating operating unit and laboratory). The sample container should be keyed to the exact operating source in the originating operating unit HIT. This allows all information about the contents of the sample container to be available in a similar manner to process vessels. Laboratories must also maintain a copy of each operating unit's HIT.

Containers with products for shipment out of the plant will not be labeled with the hazard index code labels. Signs depicting these labels will be placed near these materials in the work area (such as attaching these signs to structural supports in the shipping warehouse where drums of product are kept awaiting outshipment).

Environmental Affairs will supply appropriate labels for those chemicals that are to be transported out of the plant for sale or any other purpose.

D. Written Hazard Communication Program

The plant shall develop and implement a written hazard communication program which includes: how the criteria of the standard regarding MSDSs, labels, and training will be met; the hazardous chemicals list; the method used to inform employees of non-routine task hazards; and the method used to inform any contractors of the hazards in which their employees may be exposed.

To address the topics of informing employees of non-routine task hazards and contractors of the hazards to which their employees may be exposed, a combination of programs in place and some additional information may be necessary. Programs that are in place that must continue to be used are:

- Safe Work/Hot Work Permit Procedure
- Vessel Entry Procedure
- Other (such as excavation procedures)

Additional information that must be provided includes a summary of the materials present in the equipment requiring maintenance and their related hazards. This can also be obtained from the respective operating department HIT list and the appropriate labels for vessel contents. This information may be either computer generated or manual.

Equipment sent out for repair must be either properly labeled or completely decontaminated before it is sent out for repair.

E. Material Safety Data Sheets (MSDS)

All chemicals on the hazardous chemicals list must have an MSDS that satisfies the standard. MSDSs must be obtained for purchased chemicals and made for chemicals that are produced. Environmental Affairs will draft the MSDSs for chemicals produced and process intermediates and impurities where there is a realistic chance for exposure. Plant Purchasing is responsible for obtaining MSDSs on purchased chemicals. See Appendices C&E.

Plant Generated MSDSs

The plant Health and Safety Department must notify Environmental Affairs of the list of plant generated chemicals requiring a MSDS. These will be checked against the MSDS file. Environmental Affairs (assisted by the plant Health and Safety Department) will draft MSDSs for those chemicals where none exist. Hazardous chemicals fitting this category include only those intermediates where a realistic potential for exposure exists. See Appendix D.

Purchased Chemicals MSDS

The plant Health and Safety Department must determine what MSDSs for purchased chemicals do not exist. A list of these must be sent to the plant Purchasing Department. Purchasing must immediately obtain these MSDSs, if they are not already available in the plant. See Appendix E.

For new order chemicals, the Purchasing Department must request a copy of the MSDS with the initial order. MSDSs received will be sent to the plant Health and Safety Department for use in a hazard determination.

Computerized MSDS File

All MSDSs obtained by the plant should be entered into the MSDS computer file. Inventory/use information and vessel contents information should also be entered (See Appendix B for details).

Unit (Work Area) MSDS File

All MSDSs for the respective hazardous chemicals in each work area must be available to employees at all times. This may be in a manual (MSDS file) or computer system, depending on the resources at each location.

F. Training

When the MSDS acquisition, the system for notification of non-routine hazards and contractors, and the hazard code/labeling has progressed to a point where a training program can be constructed, work should begin. Environmental Affairs will publish a list of acceptable commercial training material considered acceptable for Hazard communication training. These items, which are the general parts (such as the use of MSDSs), are to be supplemented by parts specific to each location as necessary. See Appendix G.

The large plants must purchase this commercial training material for their use. Environmental Affairs will purchase acceptable material for use at the small plants (via rotation and re-use as required).

This training program should include:

1. Hazard code/labeling system
2. MSDS system
3. Hazard Communication Program
4. Methods to detect presence of hazardous chemicals in work area
5. Physical health hazards in work area (by classes)
6. Protective measures (by classes of chemicals):
 - procedures
 - appropriate work practices
 - emergency procedures
 - personal protective equipment required

For the additional training, the current safety meeting schedule, if necessary, may be expanded to incorporate the training necessary.

Additional training must be provided when a new hazardous chemical has been introduced into the work area or when a new employee is assigned to the work area.

APPENDIX A

PPG HEALTH AND SAFETY INDEX SYSTEM

A Health and Safety Index System was developed in the late 1970's by PPG's Coatings and Resins Group Health and Safety Department. This system has been in use with this group since with favorable results. The Chemicals' Hazard Index System is a slight modification of the C&R system which adds textual information to describe the hazards of the substance without the use of special training aids.

The Chemicals' Hazard Index System is composed of four indices. Three of these indices are numeric--those relating to health, flammability, and reactivity. The other--the one concerning personal protective equipment--is alphabetic. The three numeric indices (health, flammability, and reactivity) are rated on the following scale:

Table I
HIERARCHY OF HAZARD

Numerical Rating	Degree of Hazard
4	Severe
3	Serious
2	Moderate
1	Slight
0	Minimal

HEALTH STUDY

All of the following health categories must be evaluated using the descriptive terms and phrases of the Occupational Health Hazard Classification Guide (Table II).

- oral toxicity
- eye irritation
- skin irritation
- skin penetration toxicity
- inhalation toxicology (saturated vapor and/or varying concentrations)
- sensitization potential (skin and respiratory)
- chronic effects (including carcinogenicity, mutagenicity, and teratogenicity)

Table II

OCCUPATIONAL HEALTH HAZARD CLASSIFICATION GUIDE *

<u>Classification & Descriptive Terms</u>	<u>Short-Term Exposure</u>	<u>Long-Term Exposure</u>
4 Extreme Health Hazard	Small quantities could cause major residual injury even though prompt medical treatment is given.	Major residual health effect likely when exposed to extremely small amounts.
3 High Health Hazard	Small quantities could cause serious temporary or residual injury even though prompt medical treatment is given.	Residual health effect likely when exposed to small amounts or low levels.
2 Moderate Health Hazard	Heavy exposure could cause temporary incapacitation or possible residual injuries unless prompt medical treatment is given.	Residual health effect or serious temporary injury likely when exposed to moderate amounts.
1 Slight Health Hazard	Exposures could cause irritation or minor residual injury if no treatment is given.	Temporary health effect likely when exposed to relatively large amounts.
0 No Significant Health Hazard	Heavy exposures could cause only minor irritation with no likelihood for residual injury.	No health effect expected but may be a nuisance.

*To be used as a guide only. Professional judgment should be used in determining final classification/

The final health hazard rating for a chemical is determined by assigning the worst rating in any one category as the overall rating for the chemical.

FLAMMABILITY INDEX

The flammability index deals with the degree of susceptibility of chemicals to burning. The criteria used to assign this index in the PPG Health and Safety Index System are those found in NFPA 704-M. A brief description of them follows:

<u>Index</u>	<u>Hazard</u>
4	<u>Severe</u> - very flammable gases or very volatile flammable liquids with flash points below 73°F and boiling points below 100°F (Class IA).
3	<u>Serious</u> - materials capable of ignition under almost all normal temperature conditions, including flammable liquids with flash points below 73°F and boiling points above 100°F, as well as liquids with flash points between 73°F and 100°F (Classes IB and IC).
2	<u>Moderate</u> - materials which must be moderately heated before ignition will occur, including flammable liquids with flash points at or above 100°F and below 200°F (Classes II and IIIA).
1	<u>Slight</u> - materials that must be preheated before ignition will occur. Flammable liquids in this category will have flash points at or above 200°F (Class IIIB).
0	<u>Minimal</u> - materials which are normally stable and will not burn unless heated.

REACTIVITY INDEX

The Reactivity Index also utilizes criteria adopted from NFPA 704-M. This index deals with a material's degree of susceptibility to release energy. Although the criteria for assigning this index are sometimes modified for certain materials to reflect the industrial setting rather than fire conditions, the following NFPA definitions are used:

<u>Index</u>	<u>Hazard</u>
4	<u>Severe</u> - these materials are readily capable of detonation or of explosive decomposition at normal temperatures and pressures.
3	<u>Serious</u> - materials which are capable of detonation or explosive reaction but require a strong initiating source or must be heated under confinement before initiation, or materials which react explosively with water.

- 2 Moderate - materials which in themselves are normally unstable and will readily undergo violent chemical change but will not detonate. These materials may also react violently with water.
- 1 Slight - materials which are normally stable but can become unstable at high temperatures and pressures. These materials may react with water but will not release energy violently.
- 0 Minimal - materials which are normally stable, even under fire conditions, and which will not react with water.

PERSONAL PROTECTIVE EQUIPMENT CODES

Personal Protective Equipment Codes have been designed to complement the Health Hazard Index. As a result, the personal protective equipment specified will reflect the routes of exposure that may result in the health hazard.

To be computer compatible, information about appropriate protective equipment has been coded such that the first digit of each two-digit code reflects the type of protection and the second digit reflects the actual equipment to be used:

<u>Type of Protection</u>	<u>1st Digit</u>	<u>Actual Equipment</u>	<u>2nd Digit</u>
Respirator	R	Vapor	1
		Dust	2
		Combination Dust & Vapor	3
		Supplied-Air	4
		Self-Contained Breathing Apparatus (SCBA)	5
		None Required	0
Eye Protection	E	Safety Glasses	1
		Chemical Goggles	2
		Goggles/Faceshield or	3
		Fullface Respirator	
Hand Protection	G	Neoprene	A
		Nitrile	B
		Butyl Rubber	C
		Etc.	
Body Protection	B	Apron	1
		Disposable Suit	2
		Slicker Suit	3
		Whole Body Protection	4
Foot Protection	F	Rubber Boots	1

Two-digit codes are printed on the label under the "Personal Protection" heading for quick reference. This information is also presented textually under "Protective Equipment."

It is important to note that these personal protective equipment indices are to be followed only when there is a reasonable potential for direct contact. The conditions surrounding each potential exposure may require professional judgment by the location health/safety employees.

COMMUNICATION OF THE SYSTEM

General

Since Chemicals' computer generated labels already contain textual descriptions of all hazard information, no interpretive guides are needed.

Labels

A copy of a typical Chemicals' label is shown in Figure 1. These labels will be printed on special label stock at the plants as needed.

Computer Information

In order to maintain a uniform index system throughout the group, control of code assignments is preserved by permitting only authorized personnel from the Group Industrial Hygiene Staff to input information into the system.



CHEMICALS' HAZARD INDEX SYSTEM
DATA SUMMARY SHEET

Revision No. 6
5/20/86

Date _____
By _____

I. MATERIAL SAFETY SUMMARY

Product Name _____
MSDS Identifier _____ Cas or Trade No. _____
Evaluated as a Mixture (Y/N) _____ (for mixtures only)
Health _____ Flammability _____ Reactivity _____
Respirator _____ [0-not required, 1-vapor, 2-dust, 3-combination,
4-supplied air, 5-SCBA]
Eye Protection _____ [1-glasses, 2-goggles, 3-goggles/face shield or
full face respirator]
Gloves _____ [A-neoprene, B-nitrile, C-butyl, D-natural
rubber, E-PVA, F-PVC, G-polyurethane, H-Viton®, I-cloth or leather,
J-polyethylene, X-impermeable]
Clothing _____ [1-apron, 2-disposable suit, 3-slicker suit, 4-chem. suit]
Footwear _____ [1-rubber]
Inhalation Tox _____ [code from Section III-1]
Skin Tox _____ [code from Section III-2]
Ingestion Tox _____ [code from Section III-3]
Skin Irritation _____ [code from Section III-4, sensitizers-4]
Eye Irritation _____ [code from Section III-5]
Carcinogenicity _____ [0-similar substance caused cancer,
1-insufficient information, 2-probably carcinogenic, 3-human carcinogen]
Target Organs/Effects _____ [A-CNS, B-liver, C-heart,
D-lungs, E-kidneys, F-blood/bone marrow, G-stomach, H-reproduction,
I-skin, T-optic nerve/eye, K-musculoskeletal, L-teratogen, M-mutagen,
N-sensitizer]

II. General

Suppliers, Trade Names _____
Boiling Pt (°F) _____ Flash Pt (°F) _____ VP _____
This evaluation is based on: ☐ Mfr MSDS ☐ Independent Evaluation
List MSDS issue date _____
If substance is a trade name mixture, check here and complete below: ☐
• Is evaluation based on tests of mixture as a whole? _____
• List ingredients: _____

	Name	Cas #	%
A)	_____	_____	_____
B)	_____	_____	_____
C)	_____	_____	_____
D)	_____	_____	_____
E)	_____	_____	_____

Note: If evaluation is based on individual components of mixture, indicate toxicity by the letter (above) for each ingredient. Use professional judgment to assign overall rating in each category.

III. HEALTH

Acute Toxic Properties

1. Inhalation

- | | | |
|---|----|--|
| <p>A. Gases, vapors (ppm)
LC₅₀ Rat, 1 hr exposure</p> <p>☐ 0 >10,000 ppm</p> <p>☐ 1 >2,000-10,000 ppm</p> <p>☐ 2 >200-2,000 ppm</p> <p>☐ 3 >20-200 ppm</p> <p>☐ 4 0-20 ppm</p> <p>☐ Other _____</p> | OR | <p>B. Gases, vapors (ppm)</p> <p>☐ 0 4 hr. inhalation of
128,000 ppm kills 0-4
of 6 rats</p> <p>☐ 1 4 hr. inhalation of
16,000 ppm kills 0-4
of 6 rats</p> <p>☐ 2 4 hr. inhalation of
2,000 ppm kills 0-4
of 6 rats</p> <p>☐ 3 4 hr. inhalation of
250 ppm kills 0-4 of
6 rats</p> <p>☐ 4 4 hr. inhalation of
250 ppm kills 5 of
6 rats</p> <p>☐ Other _____</p> |
| <p>C. Dust, Mist, Fume, Gas,
Vapor-Saturated Air
Concentration</p> <p>☐ 0 8 hrs. inhalation kills
0, 2 or 3 of 6 rats</p> <p>☐ 1 2-4 hrs. inhalation kills
2, 3 or 4 of 6 rats</p> <p>☐ 2 1/4 hr. inhalation kills
2, 3 or 4 of 6 rats</p> <p>☐ 3 2-5 min. inhalation kills
2, 3 or 4 of 6 rats</p> <p>☐ 4 2 min. inhalation kills
5 of 6 rats</p> <p>☐ Other _____</p> | OR | <p>D. Dusts, Fumes, Mists (mg/l)
LC₅₀ Rat, 1 hr exposure</p> <p>☐ 0 >200 mg/l</p> <p>☐ 1 >20-200 mg/l</p> <p>☐ 2 >2-20 mg/l</p> <p>☐ 3 >0.2-2 mg/l</p> <p>☐ 4 0-0.2 mg/l</p> <p>☐ Other _____</p> |

2. Dermal LD₅₀ Rabbit

- ☐ 0 >5,000 mg/kg
- ☐ 1 >1,000-5,000 mg/kg
- ☐ 2 >200-1,000 mg/kg
- ☐ 3 >20-200 mg/kg
- ☐ 4 0-20 mg/kg
- ☐ Other _____

3. Oral LD₅₀ Rat

- ☐ 0 >5,000 mg/kg
- ☐ 1 >500-5,000 mg/kg
- ☐ 2 >50-500 mg/kg
- ☐ 3 >1-50 mg/kg
- ☐ 4 >0-1 mg/kg
- ☐ Other _____

- 3 -

4. Skin Irritation
4 hr exposure

- ☐ 0 Essentially non-irritating
- ☐ 1 Slightly irritating
- ☐ 2 Primary irritant, sensitizer (circle one)
- ☐ 3 Severely irritating and/or corrosive
- ☐ 4 Not applicable

5. Eye Irritation

- ☐ 0 Essentially non-irritating
- ☐ 1 Slightly irritating but reversible within 7 days
- ☐ 2 Moderately irritating or persisting more than 7 days with reversible corneal opacity
- ☐ 3 Corrosive, irreversible corneal opacity
- ☐ 4 Not applicable

Chronic Toxic Properties

If suspect chronic health hazard, list all target organs/effects: _____

Carcinogenicity Status (NTP, ACGIH, IARC): _____

Overall Health Rating

For chemical substances and mixtures which do not possess chronic toxic properties, the health rating is taken to be the most severe of the acute ratings. For those materials to which potential chronic health hazards can be associated, the overall health rating should reflect the severity of the potential hazard and should be of sufficient magnitude to alert employees to take the recommended and necessary precautions. Therefore, all materials considered to be chronic hazards should carry a 3 (serious) or 4 (severe) health hazard rating. Materials which may present chronic hazards include carcinogens, mutagens, teratogens, sensitizers, neurotoxins, fibrogenic dusts, and other organ-specific toxins. It is the responsibility of the rater to evaluate available information in light of product knowledge and the provisions of the OSHA Hazard Communication Standard.

IV. FLAMMABILITY - NFPA 704H Definitions

- ☐ 0 Minimal Hazard - Materials which are normally stable and will not burn unless heated to a temperature of 1,500 °F for a period of five minutes.
- ☐ 1 Slight Hazard - Materials that must be preheated before ignition will occur. Flammable liquids in this category will have flash points at or above 200°F.
- ☐ 2 Moderate Hazard - Materials which must be moderately heated before ignition will occur, including flammable liquids with flash points at or above 100°F and below 200°F.

- [] 3 Serious Hazard - Materials capable of ignition under almost all normal temperature conditions, including flammable liquids with flash points below 73°F and boiling points above 100°F, as well as liquids with flash points between 73°F and 100°F (NFPA Classes 1B and 1C).
 - [] 4 Severe Hazard - Very flammable gases or very volatile flammable liquids with flash points below 73°F and boiling points below 100°F (NFPA Class 1A).
-

V. REACTIVITY - NFPA 704M Definitions

- [] 0 Minimal Hazard - Materials which are normally stable, even under fire conditions and which will not react with water.
 - [] 1 Slight Hazard - Materials which are normally stable but can become unstable at high temperatures and pressures. -These materials may react with water but will not release energy violently.
 - [] 2 Moderate Hazard - Materials which in themselves are normally unstable and will readily undergo violent chemical change but will not detonate. These materials may also react violently with water.
 - [] 3 Serious Hazard - Materials which are capable of detonation or explosive reaction but require a strong initiating source or must be heated under confinement before initiation and materials which react explosively with water.
 - [] 4 Severe Hazard - These materials are readily capable of detonation or or explosive decomposition at normal temperatures and pressures.
-

APPENDIX B

PPG INTERNAL MATERIAL SAFETY DATA SYSTEM

INSTRUCTIONS

1. Use the Chemical Name Index following (or other source such as Vessel Inventory data) to find the IMSDS # for the chemical(s) in question.
2. Locate which fiche # you need by referring to the table below.
3. The grid coordinates of the MSDS may be found by using the "locator" in the lower right hand corner (as inserted) of the fiche itself.
4. After locating the information you need - remember to put the fiche back in its proper slot.

<u>IMSDS #</u>		<u>FICHE #</u>	<u>IMSDS #</u>		<u>FICHE #</u>
From	To		From	To	
1	- 41	1	1431	- 1472	35
41	- 84	2	1472	- 1513	36
84	- 125	3	1513	- 1553	37
125	- 168	4	1553	- 1591	38
168	- 206	5	1591	- 1630	39
206	- 247	6	1630	- 1673	40
247	- 289	7	1673	- 1718	41
289	- 331	8	1718	- 1759	42
331	- 378	9	1759	- 1769	43
378	- 423	10			
423	- 465	11			
465	- 507	12			
508	- 549	13			
549	- 590	14			
590	- 633	15			
633	- 674	16			
674	- 715	17			
715	- 758	18			
758	- 801	19			
801	- 844	20			
845	- 887	21			
887	- 929	22			
929	- 972	23			
972	- 1013	24			
1013	- 1054	25			
1054	- 1095	26			
1095	- 1137	27			
1138	- 1179	28			
1180	- 1221	29			
1221	- 1265	30			
1265	- 1306	31			
1306	- 1347	32			
1348	- 1388	33			
1388	- 1431	34			

APPENDIX B

CHEMICALS' MSDS COMPUTER FILE

DIRECTIONS FOR ACCESSING MSDS SYSTEM:

Terminal #20 (located in EA coffee room) and terminal #27 (located next to Elaine Vogt's office) are the only two FOUR-PHASE SYSTEMS available for MSDS usage.

To get to System B Menu from FOREWORD SCREEN hit CTRL (located upper row first key) and CURSOR RETURN keys simultaneously. Otherwise type S20.

FROM "SYSTEM B MENU"

1. Select "Vision" by moving down cursor key then press CURSOR RETURN key.
2. Type: S20 then type 3.
3. At blank screen enter application name: PCICS then press ENTER KEY (located 1 key down from cursor return key).
4. When WELCOME SCREEN appears press CLEAR key (located on top row centr).
5. Type 3GA0.
6. PPG LOGO SCREEN appears type (on first line): CGIM
(on second line): MSDS

press enter.
7. MSDS MAIN MENU appears:
 - a. To view MSDS select section by typing any number from 5 to 20.
Enter PASSWORD: PPG
Enter MSDS NUMBER
 - b. To print a MSDS sheet enter 22.
MSDS will print on Employee Relation's PRINTER #5 at half hour intervals.

NOTE: INDEX by PRODUCT NAME, MANUFACTURER, and MSDS NUMBER will be kept on credenza in EA coffee room.

EXIT:

8. Exit individual MSDS screens 1-20 by positing cursor between "()" located at bottom of screen and typing in desired screen number or return to Main Menu by hitting PA2 (top row).
9. EXIT MSDS system by pressing PA2 (top row) hit RESET key (top row) type: X, then S. System B Main Menu appears.

DIRECTIONS FOR PRINTING HIT SHEETS

Select HIT LIST PRINT REQUEST (type 26) from the MSDS Main Menu. For directions on how to get to the MSDS Main Menu follow instructions 1-7 "DIRECTIONS FOR ACCESSING MSDS SYSTEM."

The "INTERNAL MSDS HIT LIST REQUEST" Menu will appear as follows:

Selection Criteria:

Vessel ID (	)	Location (	)
(	)	(	)
(	)	(	)
(	)	(	)
(	)	(	)
(	)	(	)
(	)	(	)
(	)	(	)
(	)	(	)
(	)	(	)

up to 10 vessel id numbers can be enter at one time. Use the SHIFT key simultaneously with the right or left ARROW keys to move between vessel id and location.

Location number must be enter for each vessel id.

EX.

Vessel ID (	RX501 ACF	)	Location (	240	)
(	RC1004 ACF	)	(	240	)
(	05010039	)	(	281	)

After typing in id numbers press enter to print.

The system will highlight an incorrect entry. Check the vessel id number and reenter by typing over incorrect id number. PF10 (1st key, bottom row, right side key pad) will clear all entry at once.

EXIT system and return to Main Menu press PA2.

DIRECTIONS FOR PRINTING LABELS

1. Logon onto TSO with your respective logon id's. (*See TSO Coordinator with TSO questions.)
2. Once logged onto TSO, get into ISPF option 2, edit panel.

Tab down to the line that says:

DATA SET name and type in CGIM00.MSDS.DATA, then press enter.

```
EDIT --- CHM0202.CGIM00.MSDS.DATA ----- COLUMNS 001 072
COMMAND ==>
XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX TOP OF DATA XXXXXXXXXXXXXXXXXXXXXXXXXXXX
000001 001T00000009
000002 001C00023171
XXXXXX XXXXXXXXXXXXXXXXXXXXXXXXXXXX BOTTOM OF DATA XXXXXXXXXXXXXXXXXXXXXXXXXXXX
```

Contains CAS or trade number.
Always pad with leading zeroes.
Required field.

Contains C for CAS number or
T for trade number.
Required field.

Contains number of copies requested.
Always pad with zeroes.
The number of copies you receive will
always be twice what you requested.
Required field.

Once you have entered all of your requests for labels, hit PF3 to save your data.

3. On the line where your cursor is setting, type in = P.8.1 (this is the UCC7 jobs panel) and press enter.

Enter CGIMRPGO in the jobname.

Press Enter.

When your CRT returns; on the command line at the top of the screen enter END.

Then continuing pressing PF3 until a Ready appears.

Now logoff.

*Failure to enter any of these fields will cause your job to terminate without labels being printed.

APPENDIX C

Appendix "C" is written to affix responsibilities for the various parts of the OSHA Hazard Communication Standard.

<u>Responsibility</u>	<u>Person</u>
1. Perform hazard determination for hazardous chemical products.	Manager of Product Safety
2. Perform hazard determination for hazardous chemicals created with-in and used exclusively on-site.	Manager of Product Safety
3. Perform Materials Inventory.	Operating Department Superintendent
4. Obtaining MSDSs from vendors.	Plant Purchasing Manager
5. Perform hazard evaluation on Inventory.	Manager of Occupational Health/Industrial Hygiene
6. Complete MSDS and label chemicals created on-site (both captive use and products).	Manager of Product Safety
7. Update MSDS as necessitated by new scientific information.	Manager of Product Safety
8. All in-plant labeling requirements.	Plant Health/Safety Manager
9. Proper labeling on containers leaving the workplace.	Plant Shipping Superintendent
10. Employee HAZ-COM training.	Plant Health/Safety Manager

Persons listed as responsible are those that have the responsibility for complying with the various parts of the OSHA Hazard Communication Standard. They may use any resource to see that their responsibilities are completed.

APPENDIX E-1

DELIQUENT MSDS POLICY

All chemicals that are on the plant hazardous chemicals list must have an MSDS that satisfies the standard. Plant Purchasing is responsible for obtaining MSDSs on purchased chemicals.

For "new order" chemicals, the Plant Purchasing Department must request a copy of the MSDS with the initial order. If a copy of the MSDS is not received at the time of the initial order, timely follow-up to obtain the MSDS is necessary. The following steps must be taken to assure prompt MSDS acquisition.

1. When a "new order" chemical is received without an MSDS, a copy of Letter A must immediately be sent to the supplier.
2. If there is still no response after 30 days, a copy of Letter B must be sent to the supplier.
3. If there is still no response after an additional 30 days, a copy of Letter C must be sent to the supplier.
4. After an additional 14 days, if no response is received, the plant has two options:
 - a. Discontinue purchase of material.
 - b. Ask Environmental Affairs to place the health/safety/toxicology information (used as an interim information source) into a formal MSDS format, and place it into the MSDS data bank.

LETTER A

Date: _____

TO: Chemical Substance Supplier
(Name & Address)

In order to operate its' facilities in a safe & healthful manner, and in compliance with Local, State, & Federal Laws, PPG Industries, Inc.,
(facility location) _____ facility requires a copy
of the Material Safety Data Sheet for the product(s) purchased from you listed
below:

Please forward MSDSs and any other safety, health, & environmental data to:

Name _____
Address _____

Thank you for your prompt attention

Plant Purchasing
(Name & Address)

LETTER B

30 DAYS LATER THE FOLLOWING LETTER WILL BE SENT

Date _____

TO: Chemical Substance Supplier
Name & Address

On _____ (list date of first letter), we requested MSDSs for the following materials (see attached letter):

To date, we have not received MSDSs for these product(s) purchased from you. If we do not have these MSDSs on file at our facility, we are not permitted to release materials from Shipping & Receiving.

Please forward the above requested materials so that we may continue purchase of your products.

Plant Purchasing
(Name & Address)

LETTER C

30 DAYS THE FOLLOWING LETTER WILL BE SENT

Date _____

TO: Chemical Substance Supplier
(Name & Address)

On Date of first letter we requested Material Safety Data Sheets for the following materials (see attached letter):

On (list date of second letter) we again requested Material Safety Data Sheets for the above listed materials (see attached). If we do not receive these MSDSs within two weeks (list date), we will cease purchase of the above listed products.

Plant Purchasing
(Name & Address)

c: Plant Safety

APPENDIX F-1

HIT TABLE POLICY

All process and fixed storage vessels will have a Hazardous Information Table (HIT) made to represent the hazards, toxicology, and personal protection aspects of the contents of the vessel. This table will be computer generated and will represent a worst case scenario where direct contact with the vessel contents is likely.

The top section of the table will address a numerical rating for Health, Flammability, and Reactivity (See Appendix A). These ratings, which will be printed in large numbers, will allow an assessment of the hazards presented by a "quick glance" by an employee.

The second section will address the types of personal protection needed when direct contact is likely. The remainder of the bottom section addresses irritation, acute, and chronic/subchronic toxicology. Also listed are the Data Bank number for the applicable MSDSs.

Except where information on the MSDS is not accepted, the information used in preparing these tables comes from information presented on the corresponding MSDS.

H I T L I S T VESSEL ID 2-EH0H STG

* * **** * * * *	*****
* * * * *	** *
* * * * *	** *
* * * * *	***
* * * * *	** *

*** * * * * *	*****
* * * * *	* *
*** * * * *	*
* * * * *	*****
* * * * *	*

*** * * * * *	*****
* * * * *	* *
*** * * * *	* *
** * * * *	* *
* * * * *	* *

P E R S O N A L P R O T E C T I O N

PROTECTIVE EQUIPMENT (DIRECT CONTACT)
 RESPIRATOR TYPE: VAPOR
 EYE PROTECTION: GOGGLES/FACE SHIELD
 GLOVES: NEO NIT BUTYL
 CLOTHING: APRON
 FOOTWEAR: RUBBER BOOTS

EYE/SKIN CONTACT
 SKIN IRRITATION: PRIMARY IRRITANT
 EYE IRRITATION: CORROSIVE/IRREVERSIBLE

ACUTE TOXICITY
 INHALATION: SLIGHT
 SKIN ABSORPTION: MODERATE
 INGESTION: SLIGHT

CHRONIC/SUBCHRONIC TOXICITY
 TARG ORG/EFF: CNS LIV KID

MSDS NUMBERS:
 2171

GLOVE IDENTIFIER

GLOVE MATERIAL

NEOPRENE
NITRILE
BUTYL
NATURAL RUBBER
POLYVINYL CHLORIDE
POLYVINYL ALCOHOL
POLYURETHANE
VITON
CLOTH/LEATHER
IMPERMEABLE

ABBREVIATION

NEO
NIT
BUT
NAT
PVC
PVA
POLY
VIT
CLO/LEA
IMP

APPENDIX G
TRAINING FORMAT

Requirement	Activity
1. Hazard Communication Standard/ PPG Program	OSHA Tape/Lecture (General)
2. MSDS System	ITS Tape-MSDS (General)
3. Hazard Code/Labeling	Overhead Slides/Lecture (General)
4. Methods to Detect Hazards	Presentation (By Area)
5. Physical/Health Hazards in Work Area	Presentation (By Area)
6. Protective Measures	Presentation (By Area)

GENERAL GUIDELINES FOR THE DEVELOPMENT
OF PRECAUTIONARY LABELS

This manual is intended for use by PPG Chemicals as a general guideline for developing MSDSs and precautionary labels. These same guidelines can be used to comply with the hazard determination requirements of the OSHA Hazard Communication Standard. These procedures apply to industrial and consumer products, product samples, new, experimental materials, and FIFRA-regulated products. Terminology and format suggested for precautionary labels serve as guides in developing and designing labels. Ultimate label design may vary for each product hazard, depending upon product use pattern and the probability of hazard occurrence during normal product use and reasonably foreseeable misuse. PPG's method of hazard determination is based upon the American National Standards Institute (ANSI) Z-129.1-1982 standard. An American National standard is intended as a guide to aid the manufacturer, the consumer, and the general public. The ANSI standard is reviewed and updated on a 5-year cycle; thus, as changes are made, it will be necessary to update this manual.

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SECTION I - DEVELOPMENT OF HAZARD INFORMATION AND DATAA. TOXICITY INFORMATION AND DATA

1. Label development for all products requires toxicity information to properly establish hazard statements, precautions, first aid, and to some extent, handling and storage information. Typically, the following data are required to develop a label properly:

**Acute Toxicity: Oral
 Dermal
 Inhalation

**Eye and Skin Effects: Corrosive
 Irritating
 Sensitizer

**Available chronic toxicity and related hazards

2. The Manager, Product Safety, will be responsible for collection, development, analysis, and interpretation of human health hazard and animal toxicity information necessary to determine and recommend safe handling requirements for the purpose of product label development in conjunction with the Corporate Medical Director; Manager, Industrial Toxicology; and the Manager, Industrial Hygiene.

3. Wherever possible, PPG-sponsored data will be developed and shall be used for verification of other available information and data. In cases where PPG and other data conflict, PPG data shall be used as the basis for label design, provided that in the opinion of the Manager, Industrial Toxicology, such PPG-sponsored data are more reliable and valid.
4. Human experience, when available, will take precedence over animal data in assessing health and safety aspects for any PPG product.
5. If PPG-sponsored data are not available, an evaluation of available data from outside sources [Material Safety Data Sheets (MSDS) and the scientific literature] will be made by the Manager, Industrial Toxicology with the assistance of the Manager, Industrial Hygiene. On the basis of their professional evaluation of such data, they shall make a judgemental determination whether such data are adequate for preparation of the label without the use of PPG-sponsored data.

6. In cases where non-PPG-sponsored data are used, the Manager, Industrial Toxicology will, as soon as practical, initiate PPG-sponsored toxicity testing, if in his judgement, such testing is necessary to confirm the adequacy of the product label.

B. OTHER HAZARD INFORMATION AND DATA

The Manager, Product Safety, in conjunction with R&D and Profit Center personnel, will be responsible for providing composition and physical and chemical properties of individual products for use in label design. Such properties include flash point, oxidizing potential, nature and amount of impurities, and any other inherent properties which may have a bearing on label development.

They will also be responsible for the preparation of label information pertaining to product handling, storage, recommended use, emergency procedures (firefighting and spill/leak clean-up) and other hazards not inherent with the basic product, e.g. contact with acids or metals, including warnings against reasonably foreseeable misuses.

C. PRODUCT LABEL REVIEW

We must ensure consistency in all disseminated product safety communications, i.e. product labels, Material Safety Data Sheets, product manuals, and brochures. As part of our Product Safety Policy, we have chosen the Material Safety

Data Sheet as the "focal point" for up-to-date product safety and health information, upon which all other product safety communications shall be based.

Product label reviews and modifications will, therefore, be accomplished as follows:

1. All product labels will be reviewed and modified as necessary to conform with information contained in the corresponding Material Safety Data Sheet (MSDS) and with these guidelines. Subsequent revisions of MSDSs will be performed at least every two years. As pertinent new information on the health or safety aspects of the product becomes known, such information will be incorporated into the MSDS in a timely manner and, where appropriate, will cause the initiation of a product label revision. The OSHA standard requires that MSDSs be updated within 90 days of the issuance of new information on a product.
2. Any changes in legal requirements for product labels, as communicated by the Law Department, shall cause product label revisions wherever such changes occur.

3. All product labels shall be reviewed for possible revision every two years providing no earlier changes occur as in #1 and #2 above.
4. The OSHA standard does not require that any tox testing be done, but you must pass along any information regarding health and safety in your possession.

SECTION II - HAZARD DEFINITIONSHIGHLY TOXIC:

ANSI (POISON) - Oral LD₅₀ (rats) ≤ 50 mg/kg
Dermal LD₅₀ (rabbits) ≤ 200 mg/kg (24-hour
contact)
Inhalation LC₅₀ (rats) ≤ 200 ppm (gas or
vapor)* or
 ≤ 2 mg/liter
(mist, fume,
dust)*

*One-hour continuous inhalation (produces death to 50 percent
or more of a group of animals within 14 days of prescribed
exposure).

DOT (Class B Poison) - Same as above (produces death to 50
percent or more of a group of 10 animals within 48 hours of
prescribed exposure).

Federal Hazardous Substances Act (poison) - Same as ANSI

TOXIC

ANSI: Oral LD₅₀ (rats) > 50 but ≤ 500 mg/kg

Dermal LD₅₀ (rabbits) > 200 but ≤ 1000 mg/kg (24-hour
contact)

Inhalation LD₅₀ (rats) > 200 but ≤ 2000 ppm (gas or
vapor)

OR

LC₅₀ (rats) > 2 but ≤ 20 mg/liter (mist, fume, dust)
(one-hour continuous inhalation)

(Produced death to 50 percent or more of a group of 10 ani-
mals within 14 days of prescribed exposure)

DOT - None

Federal Hazardous Substances Act:

Oral - LD₅₀ > 50 but ≤ 5000 mg/kg

Dermal - LD₅₀ > 200 but ≤ 2000 mg/kg (24 hours)

Inhalation - LC₅₀ > 200 but ≤ 20,000 ppm (1 hour)

OR

> 2 but ≤ 200 mg/liter

(Produces death to 50 percent or more of a group of 10 ani-
mals within 14 days of prescribed exposure.)

For the purposes of defining more closely the hazard classi-
fication of our products and to assist in differentiating
the degree of toxicity between products (thus facilitating

use of modified label terminology), the following health hazard rating system shall be used:

ANIMAL TOXICITY VALUES

HEALTH HAZARD RATING	ORAL (RATS) LD ₅₀ (MG/KG)	DERMAL (RABBITS) LD ₅₀ (MG/KG)	INHALATION LC ₅₀ (RATS) (PPM) (MG/LITER)
Extremely Toxic (Poison)	≤ 1	≤ 5	≤ 10 ≤ 0.2
Highly Toxic (Poison)	≤ 50 but > 1	≤ 200 but > 5	≤ 200 but > 10 ≤ 2 but > 0.2
Moderately Toxic	≤ 500 but > 50	≤ 340 but > 200	≤ 1000 but > 200 ≤ 20 but > 2
Slightly Toxic	≤ 5000 but > 500	≤ 2800 but > 340	10,000 but > 200 ≤ 200 but > 20
Not Significantly Toxic	> 5000	> 2800	> 10,000 > 200

The preceding ratings were partially derived from the NIOSH publication, An Identification System for Occupationally Hazardous Materials (1974), submitted to OSHA as a recommended precautionary labeling standard. Exceptions in the preceding table to the NIOSH system are for HIGHLY TOXIC by dermal contact and by inhalation. In these cases, the preceding values coincide with the DOT definitions, since we are required by regulation to ship and label such products as Class B Poisons.

CORROSIVE

ANSI: A chemical that, in contact with living tissue, causes destruction of the tissue by chemical action.

- DOT: 1. A chemical that causes visible destruction or irreversible alterations in human skin tissue at the site of contact, or,
2. A liquid whose corrosion rate exceeds 0.250 inch per year on steel (SAE 1020) or aluminum (Non-clad 7075 - T6) at a test temperature of 130°F.

Federal Hazardous Substances Act: Same as ANSI.

STRONG SENSITIZER

ANSI: A chemical that available data on human experience show to be capable of inducing an allergic reaction in a substantial number of persons who come in contact with it.

DOT: None

Federal Hazardous Substances Act:

A substance which will cause on normal living tissue, through an allergic or photodynamic process, a hypersensitivity which becomes evident on reapplication of the same substance and which is designated as such by the Commission.

IRRITANT

ANSI: A chemical, not a corrosive, which on immediate, prolonged, or repeated contact with normal living tissue will induce a local inflammatory reaction.

DOT: A substance which, upon contact with fire or when exposed to air, gives off dangerous or intensely irritating fumes, but not including Class A Poison.

Federal Hazardous Substances Act: Same as ANSI.

EXTREMELY FLAMMABLE LIQUID

ANSI: Flash Point $< 20^{\circ}\text{F}$

(Tag closed cup; Pensky-Martens closed tester for liquids of a viscosity greater than 45 SSU)

DOT: None

Federal Hazardous Substances Act: Flash Point $\leq 20^{\circ}\text{F}$ (Tag open cup)

FLAMMABLE LIQUID

ANSI: Flash Point $> 20^{\circ}\text{F}$ but $< 100^{\circ}\text{F}$

Seta Flash, Tag closed cup; Pensky-Martens closed tester for liquids of a viscosity greater than 45 SSU)

DOT: $< 100^{\circ}\text{F}$ Tag closed cup--for homogeneous, single-phase liquids having a viscosity less than 45 S.U.S. at 100°F and does not form a surface film while under test. A Pensky-Martens Closed Tester may be used for liquids not meeting the above requirements, or a Seta-flash Closed Tester may be used for any liquid.

Federal Hazardous Substances ACT: Flash Point $> 20^{\circ}\text{F}$ but $\leq 80^{\circ}\text{F}$ (Tag open cup)

COMBUSTIBLE LIQUID

ANSI: Flash Point $\geq 100^{\circ}\text{F}$ but $< 200^{\circ}\text{F}$ (Tag closed cup;
Pensky-Martens closed tester for liquids of a viscosity greater than 45 SSU)

DOT: Flash Point $\geq 100^{\circ}\text{F}$ but $< 200^{\circ}\text{F}$ and tested the same as flammable liquids for DOT.

Federal Hazardous Substances ACT: Flash Point $> 80^{\circ}\text{F}$ but $\leq 150^{\circ}\text{F}$ (Tag open cup).

FLAMMABLE SOLID

ANSI: A solid, other than an explosive, that is liable to cause fire through friction, absorption of moisture, spontaneous chemical change, or retained heat from manufacturing or processing, or that can be ignited readily, and when ignited, burns so vigorously and persistently as to create a serious hazard.

DOT: Same

Federal Hazardous Substances Act:

Extremely Flammable Solid - A solid substance that ignites and burns at an ambient temperature of 80°F or less when subjected to friction, percussion, or electrical sparks.

Flammable Solid - A solid substance that ignites and burns with a self-sustained flame at a rate greater than one-tenth of an inch per second along its major axis (See test method described in 16 CFR Sec. 1500.44).

OXIDIZING MATERIAL

ANSI: A chemical that promotes oxidation readily and on contact with a combustible material may cause fire.

DOT: A substance that yields oxygen readily to stimulate combustion of organic matter.

Federal Hazardous Substances Act: None

PRESSURE-GENERATING CHEMICAL

- ANSI:
1. A chemical that must be protected from spontaneous polymerization by the addition of an inhibitor; or by refrigeration or other thermal control.
 2. A chemical that may decompose to release gas in its container.
 3. A chemical that comprises the contents of a self-pressurized container.

DOT: None

Federal Hazardous Substances Act:

A substance or mixture of substances that generates pressure through decomposition, heat, or other means is a hazardous substance:

1. If it explodes when subjected to an electrical spark, percussion, or the flame of a burning paraffin candle for five seconds or less;
2. If it expels the closure of its container or bursts its container when held at or below 130°F for two days or less;
3. If it erupts from its opened container at a temperature of 130°F or less after having been held in the closed container at 130°F for two days, or;
4. If it comprises the contents of a self-pressurized container.

PYROPHORIC CHEMICAL

ANSI: A chemical that will ignite spontaneously in dry or moist air at a temperature of 130°F or below.

DOT: Same

Federal Hazardous Substances Act: None.

ORGANIC PEROXIDE

ANSI: None.

DOT: An organic compound containing the bivalent -O-O- structure and which may be considered a derivative of hydrogen atoms have been replaced by organic radicals.

Federal Hazardous Substances Act: None

COMPRESSED GAS

ANSI: Any material or mixture having in a container an absolute pressure exceeding 40 psi at 70°F or, regardless of pressure at 70°F, having an absolute pressure exceeding 104 psi at 130°F, or any flammable liquid having a vapor pressure exceeding 40 psi at 100°F.

DOT: Same

Federal Hazardous Substances Act: None

FLAMMABLE COMPRESSED GAS

ANSI: None.

DOT: Any compressed gas shall be classified as "flammable compressed gas" if any one of the following occurs:

1. Either a mixture of 13 percent or less (by volume) with air forms a flammable mixture, or the flammable range with air is wider than 12 percent regardless of the lower limit.
2. Any one of the Bureau of Explosives tests for flame projection, flame propagation (open drum apparatus) or explosion (closed drum apparatus) reveals a positive result for the compressed gas.

Federal Hazardous Substances Act:

Extremely Flammable Contents of Self-Pressurized Container - When tested as prescribed in 16 CFR Sec. 1500.45, a flashback (flame extending back to the dispenser) is obtained at any degree of valve opening, and the flash point is 20°F or less (tag open cup).

Flammable Contents of Self-Pressurized Container - When tested as prescribed in Section 1500.45 of the Act, a flame projection exceeding 18 inches is obtained at full valve opening or a flashback (flame extending back to the dispenser) is obtained at any degree of valve opening.

SECTION III - LABEL TERMINOLOGY

This section lists minimum statements required on precautionary labels for products which exhibit the nature and degree of hazard indicated on the extreme left-hand column (class of hazard).

Such statements shall be modified and/or added to as deemed necessary for individual products depending on degree of hazard, normal use pattern, and likelihood of hazard occurring during normal use or reasonably foreseeable misuse.

The OSHA Hazard Communication Standard requires the name of the product, the hazard warning, and the name and address of the manufacturer to be on the label. The Federal Hazardous Substances Act (for hazardous consumer or household products) and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) for pesticides also contain specific labeling requirement. The ANSI Standard Z 129.1 is a federal consensus guideline for labeling of industrial products, but compliance is not required by law.

The terminology contained in this section is only for industrial products not governed by any of the above-mentioned laws. Nevertheless, the majority of this terminology has been assembled in compliance with the Federal Hazardous Substances Act as well as the ANSI Standard Z 129.1, such that both of these federal standards may be referenced as a basis for PPG precautionary label development.

CLASS OF HAZARD	SIGNAL WORD	STATEMENTS OF HAZARD	PRECAUTIONS	FIRST AID	HANDLING AND STORAGE
FLAMMABLE COMPRESSED GAS	DANGER!	FLAMMABLE LIQUID AND GAS UNDER PRESSURE	KEEP AWAY FROM HEAT, SPARKS, AND FLAME. MAY FORM EXPLOSIVE MIXTURE WITH AIR. USE ONLY WITH ADEQUATE VENTILATION*.	NONE	SAME AS FOR EXTREMELY FLAMMABLE LIQUID, PLUS STATEMENTS BELOW: STORE AWAY FROM DIRECT SUNLIGHT AND OTHER SOURCES OF HEAT DO NOT SKI, DRAG, OR DROP CYLINDERS
NONFLAMMABLE COMPRESSED GAS	WARNING!	LIQUID AND GAS UNDER PRESSURE	DO NOT APPLY HEAT TO CYLINDER. USE ONLY WITH ADEQUATE VENTILATION*.	NONE	STORE AWAY FROM DIRECT SUNLIGHT AND OTHER SOURCES OF HEAT DO NOT SKID, DRAG, OR DROP CYLINDERS
PYROPHORIC SUBSTANCE	DANGER!	EXTREMELY FLAMMABLE. CATCHES FIRE IF EXPOSED TO AIR.	DO NOT EXPOSE TO AIR. KEEP AWAY FROM HEAT, SPARKS, AND FLAME.	NONE	SAME AS FLAMMABLE LIQUIDS
HIGHLY TOXIC (Inhalation)	DANGER! O POISON	MAY BE FATAL IF INHALED	DO NOT BREATHE (DUST, VAPOR, MIST, GAS) USE ONLY WITH ADEQUATE VENTILATION.*	REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. CALL A PHYSICIAN.	WEAR RESPIRATORY PROTECTION WHEN HANDLING. (SPECIFIC PROTECTION TO BE SPECIFIED ON EACH LABEL). DO NOT STORE IN OPEN, UNLABELED, OR MISLABELED CONTAINERS.

*SEE ATTACHED DEFINITION (PAGE 24)

CLASS OF HAZARD	SIGNAL WORD	STATEMENTS OF HAZARD	PRECAUTIONS	FIRST AID	HANDLING AND STORAGE
HIGHLY TOXIC (Asorption)	DANGER! POISON	MAY BE FATAL IF ABSORBED THROUGH SKIN.	DO NOT GET IN EYES, ON SKIN, ON CLOTHING. WASH THOROUGHLY AFTER HANDLING.	IMMEDIATELY WASH EYES WITH PLENTY OF WATER (SOAP AND WATER FOR SKIN) FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAM- INATED CLOTHING AND SHOES. CALL A PHYSICIAN. THOROUGHLY CLEAN CONTAMINATED CLOTHING AND SHOES BEFORE <u>REUSE OR DISCARD.</u>	WEAR CLEAN CLOTHING DAILY. WEAR SKIN AND EYE PROTECTION WHEN HANDLING. DO NOT STORE IN OPEN OPEN, UNLABELED, OR MISLABELED CONTAINERS
HIGHLY TOXIC (Ingestion)	DANGER! POISON	MAY BE FATAL IF SWALLOWED	DO NOT TAKE INTERNALLY. WASH THOROUGHLY AFTER HANDLING.	<u>IF CONSCIOUS,</u> DRINK A QUART OF WATER, INDUCE BY PLACING A FINGER FAR BACK IN THE THROAT. CALL A PHYSICIAN. IF VOMITING CANNOT BE INDUCED, TAKE IMMEDIATELY TO A PHYSICIAN OR HOSPITAL. <u>IF UNCONSCIOUS</u> OR IN CONVULSIONS, TAKE IMMEDIATELY TO A PHYSICIAN OR HOSPITAL. DO NOT INDUCE VOMITING OR GIVE ANYTHING BY MOUTH. (ADD ANTI- DOTE, IF ANY, UNDER <u>NOTE TO PHYSICIAN</u> ALONG WITH ANY OTHER RECOMMENDATIONS).	DO NOT STORE IN OPEN, UNLABELED, OR MISLABELED CONTAINERS.

CLASS OF HAZARD	SIGNAL WORD	STATEMENTS OF HAZARD	PRECAUTIONS	FIRST AID	HANDLING AND STORAGE
TOXIC (INHALATION)	WARNING!	HARMFUL IF INHALED	AVOID BREATHING (DUST, VAPOR, MIST, GAS) USE ONLY WITH ADEQUATE VENTILATION*	SAME AS HIGHLY TOXIC (INHALATION)	SAME AS HIGHLY TOXIC (INHALATION)
TOXIC (ABSORPTION)	WARNING!	HARMFUL IF ABSORBED THROUGH SKIN	AVOID CONTACT WITH EYES, SKIN, AND CLOTHING. WASH THOROUGHLY AFTER HANDLING.	SAME AS HIGHLY TOXIC (ABSORPTION)	SAME AS HIGHLY TOXIC (ABSORPTION)
TOXIC (INGESTION)	WARNING!	HARMFUL IF SWALLOWED	SAME AS HIGHLY TOXIC (INGESTION).	SAME AS HIGHLY TOXIC (INGESTION)	SAME AS HIGHLY TOXIC (INGESTION)
EXTREMELY FLAMMABLE LIQUID	DANGER!	EXTREMELY FLAMMABLE	KEEP AWAY FROM HEAT, SPARKS, AND FLAME. USE ONLY WITH ADEQUATE VENTILATION.*	NONE	BEFORE UNLOADING, PURGE OXYGEN FROM UNLOADING SYSTEM. CONTAINER AND SYSTEM MUST BE ELECTRICALLY GROUNDED BEFORE UNLOADING. ADEQUATE VENTILATION MUST BE MAINTAINED IN STORAGE AREAS TO REDUCE FIRE HAZARD IN THE EVENT OF A LEAK. DO NOT STORE IN OPEN, UNLABELED, OR MISLABELED CONTAINERS. (FIRE EXTINGUISHING PROCEDURES) (FIRE/HEAT DECOMPOSITION HAZARDS, IF ANY)

*SEE ATTACHED DEFINITION (PAGE 24)

CLASS OF HAZARD	SIGNAL WORD	STATEMENTS OF HAZARD	PRECAUTIONS	FIRST AID	HANDLING AND STORAGE
FLAMMABLE LIQUID	WARNING!	FLAMMABLE	SAME AS ABOVE.	NONE	CONTAINER AND SYSTEM MUST BE ELECTRICALLY GROUNDED BEFORE UNLOADING. ADEQUATE VENTILATION MUST BE MAINTAINED IN STORAGE AREAS TO REDUCE FIRE HAZARD IN THE EVENT OF A LEAK. DO NOT STORE IN OPEN, UNLABELED, OR MISLABELED CONTAINERS (FIRE EXTINGUISHING PROCEDURES) (FIRE/HEAT DECOMPOSITION HAZARDS, IF ANY)
COMBUSTIBLE LIQUID	CAUTION!	COMBUSTIBLE	SAME AS ABOVE.	SAME AS ABOVE	ADEQUATE VENTILATION MUST BE MAINTAINED IN STORAGE AREAS TO REDUCE FIRE HAZARD IN THE EVENT OF A LEAK. DO NOT STORE IN OPEN UNLABELED OR MISLABELED CONTAINERS.
FLAMMABLE SOLID	WARNING!	FLAMMABLE	KEEP AWAY FROM HEAT, SPARKS, AND FLAME.	SAME AS ABOVE	DO NOT STORE IN OPEN, UNLABELED, OR MISLABELED CONTAINERS.
OXIDIZER	DANGER!	STRONG OXIDIZER CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE	KEEP AWAY FROM CONTACT WITH CLOTHING AND OTHER COMBUSTIBLE MATERIALS.	IN CASE OF CONTACT, REMOVE AND WASH CONTAMINATED CLOTHING PROMPTLY.	DO NOT STORE NEAR COMBUSTIBLE MATERIALS. STORE IN TIGHTLY CLOSED CONTAINER. DO NOT REUSE CONTAINER FOR ANY PURPOSE.

CLASS OF HAZARD	SIGNAL WORD	STATEMENTS OF HAZARD	PRECAUTIONS	FIRST AID	HANDLING AND STORAGE
CORROSIVE, SKIN AND EYES	DANGER!	CAUSES SEVERE BURNS	DO NOT GET IN EYES, ON SKIN, ON CLOTHING. AVOID BREATHING (DUST, VAPOR, MIST, GAS). USE ONLY WITH ADEQUATE VENTILATION* DO NOT TAKE INTERNALLY WASH THOROUGHLY AFTER HANDLING	SAME AS STATEMENT FOR HIGHLY TOXIC BY ABSORPTION (EXCEPT DELETE USE OF SOAP FOR SKIN) ALSO INGESTION: DRINK A QUART OF WATER. DO NOT INDUCE VOMITING. TAKE IMMEDIATELY TO A HOSPITAL OR A PHYSICIAN.	WEAR (SKIN AND EYE) PROTECTION WHEN HANDLING. (SPECIFIC PROTECTION TO BE SPECIFIED ON EACH LABEL) DO NOT STORE IN OPEN, UNLABELED, OR MISLABELED CONTAINERS.
SKIN SENSITIZER	WARNING!	MAY CAUSE ALLERGIC SKIN REACTION	DO NOT GET ON SKIN, IN EYES, ON CLOTHING WASH THOROUGHLY AFTER HANDLING	IMMEDIATELY FLUSH EYES AND SKIN WITH PLENTY OF WATER (SOAP AND WATER FOR SKIN) FOR AT LEAST 15 MINUTES. IF IRRITATION OCCURS, CONSULT A PHYSICIAN. WASH CONTAMINATED CLOTHING BEFORE REUSE.	WEAR SKIN AND EYE PROTECTION WHEN HANDLING.
EYE AND SKIN IRRITANT	WARNING!	CAUSES EYE AND SKIN IRRITATION	AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.	IMMEDIATELY FLUSH EYES AND SKIN WITH PLENTY OF WATER (SOAP AND WATER FOR SKIN) FOR AT LEAST 15 MINUTES. IF IRRITATION OCCURS, CONSULT A PHYSICIAN. WASH CONTAMINATED CLOTHING BEFORE REUSE.	NONE

*SEE ATTACHED DEFINITION (PAGE 24)

NOTES ON LABEL TERMINOLOGY CHART

The statement, "USE ONLY WITH ADEQUATE VENTILATION" will be placed in the "precautions" section with an additional statement defining "adequate ventilation" as follows:

"USE ONLY WITH ADEQUATE VENTILATION"

Ventilation must be sufficient to limit employee exposure to (Name of Product) in work area at or below OSHA permissible exposure limits (see below)."

In cases where the OSHA permissible exposure level has not yet been established, a similar statement to the above will be used; however, the recommended exposure level (8-hour TWA) will be included in this statement.

SECTION IV - LABEL DESIGN GUIDELINES

Most of our products have multiple hazards for which we must adequately structure our labels. One consideration in label design must be always to list the statement of principal hazards and corresponding precautions, first aid, and handling and storage statements in order of most critical hazard first. The determination of the most critical hazards for any given product must be made. Such determination must be made on the basis of the potential ability of the product to cause injury normal use patterns, handling and usage recommendations, and reasonably foreseeable misuse. In general, the hazard priority will follow the order set below, although it is the responsibility of the Manager, Product Safety to evaluate each individual case and modify this hazard priority as necessary.

1. Flammable Compressed Gas
2. Nonflammable Compressed Gas
3. Pyrophoric Material
4. Extremely Flammable Liquid
5. Highly Toxic (poison)
 - a. Inhalation
 - b. Absorption
 - c. Ingestion
6. Flammable Liquid
7. Oxidizer

8. Flammable Solid
9. Corrosive material
10. Toxic Material
 - a. Inhalation
 - b. Absorption
 - c. Ingestion
11. Strong Sensitizer
12. Irritant
 - a. Eye
 - b. Skin
13. Combustible Liquid

A good example of hazard priorities for a give product would be the Methyl Chloroformate (MCF) label. MCF is a poison by inhalation, flammable, and corrosive.

Priority would be:

POISON--Inhalation

Flammable

Corrosive

It should be kept in mind that our present and proposed label design schemes are intended to safeguard users against the acute hazards of the product.

Subacute and chronic toxicity considerations are much more involved, and generally eight-hour time-weighted exposure limits are the only attempt on our labels to safeguard against chronic hazards of our products. Wherever possible, we will include

chronic hazard statements on labels when their chronic effects are confirmed or suspected, i.e. vinyl chloride, ethylene oxide, ethylene dichloride, etc. The OSHA Hazard Communication Standard addresses chronic effects of chemicals and, presently, ANSI is addressing labeling of chronic hazards.

SECTION V - BASIC LABEL FORMAT

This section described the basic label format to be used and the location of the various precautionary and advisory statements to be used. This format will provide the basis for label design, which can then be modified by the Committee as necessary for individual products. There will be labels that do not follow this format, i.e. surfactants. Label formats for FIFRA-registered products must also comply with these requirements.

PRODUCT NAME

CHEMICAL NAME IF DIFFERENT
FROM PRODUCT NAME

PPG CHEMICALS
LOGO

GRADE OF PRODUCT

NOT FOR DIRECT FOOD, DRUG, COSMETIC
OR PESTICIDE USE

FOR INDUSTRIAL USE ONLY

S I G N A L W O R D !

STATEMENTS OF PRINCIPAL HAZARDS

PRECAUTIONS

FIRST AID

HANDLING AND STORAGE

KEEP OUT OF REACH OF CHILDREN

OSHA PERMISSIBLE EXPOSURE LIMITS

VALUES IN PARTS PER MILLION

DATE AND SOURCE OF OSHA
REGULATION

(LOGO)

PPG INDUSTRIES, INC.
CHEMICALS GROUP
ONE PPG PLACE
PITTSBURGH, PA 15272

NET WEIGHT _____ POUNDS (OR GALLONS)
(OR NET CONTENTS) _____ KILOGRAMS (OR LITERS)

MADE IN U.S.A.

LABEL FORM No.

NOTES PERTAINING TO STANDARD LABEL FORMAT

(For Industrial Products not regulated by EPA or
Federal Hazardous Substances Act)

1. Product Name: may include trademark, if any, such as Tri-Ethane[®], or abbreviated name, such as 30% SBP, providing proper chemical name follows below.
2. Grade of Product: should define the grade or intended use of the product, such as dry cleaning grade, degreasing grade, etc. If no particular grade exists, "Technical Grade" will be used.
3. For Industrial Use Only: should be placed on all product labels except those which are authorized for direct use in foods, drugs, or cosmetics, or pesticides.
4. Not For (Direct) Food, Drug, Cosmetic, or Pesticide Use: should be included on all product labels, with the following exceptions:
 - a. Portions of this statement would be eliminated in cases where our products are intended and regarded as suitable for such uses, and where such products have been specifically authorized for such use by FDA or EPA regulations. An example of such would be the use

of Flo-Gard® silica in food or the use of Hi-Sil® amorphous silica in pesticide formulations.

- b. The word, "direct," refers to the use of our products as ingredients in foods, drugs, etc., as opposed to the "indirect" uses where our products are used in processing of foods, etc., or in the manufacture of products that will ultimately come in contact with foods, etc. In cases where our products are intended, regarded as suitable, and specifically authorized for "indirect" (but not direct) food, etc. use, then the statement, "Not for direct food. . . use," would apply. An example of this would be the use of caustic soda beads for processing potatoes.

5. Signal Word and Statements of Principal Hazards - must appear on all labels. Terminology to be in accordance with the label terminology chart (See Section III).
6. Precautions, First Aid, Handling, and Storage - These sections should appear on all product labels. Precautions should be taken from the label terminology chart and placed in order according to the degree of hazard with the greatest hazard first. These may be modified or expanded, if deemed necessary, so as to instruct the user more adequately. First Aid includes measures to be taken in case of swallowing, eye/skin contact, or inhalation, as well as notes to the

physician, where appropriate. Any or all of these may be used, depending upon the degree of product hazard. The language of the First Aid statements should be as shown on the label terminology chart. Handling and Storage statements should be those listed on the label terminology chart, plus such additional statements as may be recommended by the applicable Profit Center or Technical Service personnel for the purpose of avoiding additional hazards as may occur, both in normal use and reasonably foreseeable misuse. Handling and storage statements should, where applicable, also include instructions for dealing with leaks or spills, identify types of protective clothing recommended for handling each product, and instructions in case of fire.

7. Keep Out of Reach of Children: This statement should appear on all product labels, no matter how remote chances may be of access by children to the product.
8. OSHA Regulations: Here should be inserted the permissible exposure limit (8-hour) time weighted average value) along with other applicable ceilings and maximum allowable concentrations in parts per million in the air, along with reference to the specific regulation and its published date. It is important that this information be included since this will form the basis for the definition of "adequate ventilation" used in the "precautions" section. The ACGIH (American Conference of Governmental Industrial Hygienists) TLV is

also listed, and in a case where PPG has an exposure limit different from OSHA or ACGIH, the PPG limit is also listed. For products where OSHA permissible exposure limits have not yet been established, this section of the label and MSDS should so state.

9. PPG Logo and Address: including the Zip Code number will appear on all product labels as indicated on the attached sample. For products purchased for resale, the PPG name and address will be preceded by, "Sold by:."
10. Net Weight or Net Contents: must appear on all labels in both English measure and metric measure.
11. Miscellaneous:
 - a. The following statement should appear on all labels:
"For additional product information, contact PPG Industries." This statement can be placed at the bottom of the Precautions, First Aid, or Handling and Storage section, or elsewhere, where adequate space is available.
 - b. A code number will be printed in the lower right-hand corner of each product label. This code will be used as a label specification (form) number, date of label implementation (month and year), and number of issues preceding the most recent edition.

- c. Somewhere on the lower portion of each label, the statement, "Made in the U.S.A.," will be included. This is required for all products which are exported. For products which are manufactured outside the United States, the country of origin must be printed on the label.
- d. Whenever possible, the label size shall not exceed 8-1/2" high by 11" wide and shall be cut with square corners, to minimize overall printing expense.
- e. Label must be made of materials (paper, inks, plastics, etc.) that are not affected by the contents of the container and the reasonably foreseeable weather conditions.

SECTION VI - MATERIAL SAFETY DATA SHEET

The Material Safety Data Sheet (MSDS) is the key document for dissemination of hazard information. It is the most comprehensive document for any PPG product and all subsequent hazard information is based upon the MSDS. PPG normally uses the attached form for completing an MSDS; however, there is no standard format. The attached format and the guidelines for reading and understanding an MSDS are self-explanatory.

Material Safety Data Sheet

PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272



Approved by U.S. Dept. of Labor as Essentially similar to Form OSHA-201

Date:	Edition:
Chemical Name and Synonyms:	Trade Name and Synonyms:
Chemical Family:	Formula:
DOT Shipping Name:	DOT Hazard Class:
Reportable Quantity:	I. D. Number:
Subsidiary Risk:	

SECTION 1 • PHYSICAL DATA

Boiling Point @ 760 mm Hg:	Vapor Density (Air=1):	Specific Gravity (H ₂ O=1):	pH of Solutions:
Freezing/Melting Point:	Solubility (Weight % in Water):	Bulk Density:	Volume % Volatile:
Vapor Pressure:	Evaporation Rate (_____ =1):	Heat of Solution:	Appearance and Odor:

SECTION 2 • INGREDIENTS

	%

SECTION 3 • FIRE AND EXPLOSION HAZARD DATA

Flash Point °F (Method Used)	Flammable Limits in Air (% by Volume) LEL: UEL:	Extinguishing Media:
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Special Fire Fighting Procedures:

Unusual Fire and Explosion Hazards:

SECTION 4 • HEALTH HAZARD DATA

Toxicity Data	Classification (Poison, Irritant, Etc.)
LC ₅₀ Inhalation	Inhalation:
LD ₅₀ Dermal	Skin
Skin/Eye Irritation	Skin/Eye:
LD ₅₀ Ingestion	Ingestion:
Fish, LC ₅₀ (Lethal Concentration)	Aquatic:

24-HOUR EMERGENCY ASSISTANCE: (304) 843-1300

-36-

SL 071588

SECTION 5 • EFFECTS OF OVEREXPOSURE

This section covers effects of overexposure for inhalation, eye/skin contact, ingestion and other types of overexposure information in the order of the most hazardous and the most likely route of overexposure.

Permissible Exposure Limits:

EMERGENCY AND FIRST AID PROCEDURES:

Inhalation:

Eye or Skin Contact:

Ingestion:

Notes to Physician (Including Antidotes):

SECTION 6 . REACTIVITY DATA

Stability:

Conditions to Avoid:

Hazardous Polymerization:

Conditions to Avoid:

Incompatibility (Materials to Avoid):

Hazardous Decomposition Products:

SECTION 7 . SPILL OR LEAK PROCEDURES

Steps to be Taken if Material is Spilled or Released:

Waste Disposal Method:

SECTION 8 • SPECIAL PROTECTION INFORMATION

Respiratory Protection:

Ventilation (Type):

Eye Protection:

Gloves:

Other Protective Equipment:

SECTION 9 • SPECIAL PRECAUTIONS

Precautions to be Taken During Handling and Storing:

Other Precautions:

References:



PPG Industries, Inc. One PPG Place Pittsburgh, Pennsylvania 15272

GUIDE TO READING A MATERIAL SAFETY DATA SHEET

These are notes to help you to understand the information on a data sheet. The items covered are in the same order as they appear on the PPG MSDS. Some MSDSs may not contain all of the categories of information; other MSDSs may contain additional data.

CHEMICAL NAME AND SYNONYMS:	Refers to the technical name of the Product.
CHEMICAL ABSTRACT SERVICES NUMBER (CAS No.):	Unique number assigned by Chemical Abstract Services Company.
TRADE NAME AND SYNONYMS:	Name under which the product is marketed and the common commercial name of the product.
CHEMICAL FAMILY:	Groups product into a family of similar compounds, i.e. acids, bases, etc.
FORMULA:	Number and kind of atoms in a compound.
DOT SHIPPING NAME:	Specified by Department of Transportation.
REPORTABLE QUANTITY:	Quantity of release above which National Emergency Response Center must be notified.
I.D. NUMBER:	United Nations Identification Number as set forth in 49 CFR Part 172; could be UN or NA.
HAZARD CLASS:	Designated by the DOT, i.e. Sodium Hydroxide- Corrosive-Primary Hazard.
SUBSIDIARY RISK:	Assigned by DOT in addition to a primary hazard, some products have other risks.

SECTION 1 - PHYSICAL DATA

BOILING POINT:	Temperature in °F OR °C at which product boils.
VAPOR DENSITY:	Ratio of the density of the vapor to the density of air.

SPECIFIC GRAVITY:	Ratio of the density of the product to the density of water.
pH:	Refers to the degree of acidity or basicity.
FREEZING/MELTING POINT:	Temperature at which product melts or freezes.
SOLUBILITY IN WATER:	Weight % soluble in water.
BULK DENSITY:	Compares weight/gallon of product to weight/gallon water for liquids.
VOLUME % VOLATILE:	Amount volatilized below 300 °F.
VAPOR PRESSURE:	Refers to the pressure of saturated vapor above the liquid expressed in mm of mercury at a specified temperature.
EVAPORATION RATE:	Rate of evaporation compared to a standard.
HEAT OF SOLUTION:	Thermal effect of dissolving a substance in a solvent, i.e. caustic in water is exothermic.
APPEARANCE AND ODOR:	General characterization of the product, i.e. solid, colorless liquid, aromatic odor.

SECTION 2 - HAZARDOUS INGREDIENTS

A hazardous ingredient meets one of the following criteria:

1. Flash point below 200°F closed cup or subject to spontaneous heating.
2. Has a threshold limit value below 500 ppm (gases and vapors) below 5 mg/m³ for dust fumes and mist.
3. A single dose oral LD 50 below 500 mg/kg.
4. Causes burns to the skin in short-term exposure or is systemically toxic by skin contact.
5. Has been demonstrated to be a skin or eye irritant or causes respiratory irritation.
6. May cause skin or respiratory sensitization.
7. Has teratogenic, mutagenic, or other toxic effects.
8. May cause asphyxic or pneumoconiosis.

9. In the course of normal use, may produce dusts, gases, fumes, vapor, mists, or smoke having one of the above characteristics.
10. Is listed in OSHA 1910.1200 or by American Conference of Governmental Industrial Hygienists (ACGIH).

SECTION 3 - FIRE AND EXPLOSION DATA

- FLASH POINT: Temperature in °F at which a liquid will give off enough flammable vapor to ignite as determined by closed cup, open cup, Seta flash.
- FLAMMABLE LIMITS: Range of gas or vapor concentration by volume in air which will burn or explode if ignition source is present.
- EXTINGUISHING MEDIA: Specific fire fighting agents that should be used to extinguish fires.
- SPECIAL FIRE FIGHTING PROCEDURES: Indicates equipment to protect firemen from toxic products of combustion, or if water is not to be used.
- UNUSUAL FIRE & EXPLOSION HAZARDS: Includes hazards not covered by other sections.

SECTION 4 - HEALTH AND HAZARD DATA

- LD 50 OR LC 50: Refers to that dose or concentration of the material which will produce death in 50% of the animals. For inhalation, exposure time is indicated.
- CLASSIFICATION: Based on LD 50 or LC 50 values by oral, dermal, or inhalation testing. See American National Standard Institute (ANSI) Z-39.1 (1982), DOT regulations, or Federal Hazardous Substances Act for further details.

SECTION 5 - EFFECTS OF OVEREXPOSURE

- PERMISSIBLE EXPOSURE LIMITS: Indicates Threshold Limit Value (TLV) and/or Time Weighted Average (TWA) as established by ACGIH and/or OSHA. Where the PPG value is lower, it is also given.
- ACUTE EXPOSURES: Eye, Skin, Ingestion refers to the most

common effects that would be expected from direct contact with the product.

CHRONIC: Effects that are most likely due to repeated or prolonged exposure.

EMERGENCY FIRST AID PROCEDURES: Self-explanatory.

REACTIVITY DATA: Hazard Polymerization - reaction which takes place at a rate which produces large amounts of energy.

Stability - conditions to avoid if unstable under normal circumstances.

Incompatibility - materials to avoid.

SPILL OR LEAK PROCEDURES: Reasonable precautions to be taken and the methods to be used in the event of leakage or spills. Consult Federal, State, and Local regulations for accepted procedures and any reporting or notification requirements.

SPECIAL PROTECTION INFORMATION: The section indicates protective equipment to be used when handling the product.

Ventilation - normal means adequate to maintain permissible concentration.

Ventilation (Type) - i.e. local exhaust, mechanical, etc.

SPECIAL PRECAUTIONS: Normal includes relevant points not previously mentioned. This section is basis for precautionary label.

REFERENCES: Data upon which the MSDS is based.

4.2 -- PLANT IMPLEMENTATION PLAN

5.0 Noise and
Hearing Conservation

5.1 -- CHEMICALS' SUMMARY OF OSHA REQUIREMENTS

HEARING CONSERVATION PROGRAM REQUIREMENTSA. Employee Monitoring

1. Monitoring Specifications

- a. Instrument must measure all sound levels between 80 and 130 dBA. If the upper response range of any noise dosimeter being used by the plant is lower than 130 dBA, then it must be documented that noise levels greater than the actual upper response range do not exist in the plant.
- b. One of the following instruments must be used:
 - Noise Dosimeters
 - SLM (Measurements should be taken following a protocol that adequately defines sound level profiles.)
- c. The instrument calibration should be checked before and after each day's use.
- d. Calibration records should be kept for each instrument.

2. Monitoring Results

- a. Monitoring must be conducted for each employee or for representative employees from all job classes that may have exposures of 85 dBA or higher.
- b. All employees exposed to ≥ 85 dBA of noise must be notified of the results of monitoring. If representative monitoring of a job class is performed, all employees intended to be covered by the result must be notified.
- c. All job classes should be identified according to a particular exposure range, i.e.: < 85 , ≥ 85 , and ≤ 90 , or > 90 dBA.
- d. Each individual employee must be identified as belonging to a particular job class (or exposure group).
- e. All members of job classes which have one or more exposure measurements ≥ 85 dBA (TWA) must be included in the hearing conservation program except where there is adequate justification for exclusion.
- f. There must be an appropriate lowering of the 85 dBA criteria level to account for shift durations greater than eight hours (Appendix A of the Amendment).
- g. Appropriate records must be kept (e.g., computerization according to TEB's memo 11/30/81).

B. Training Program

1. All members of job classes which have one or more exposure measurements $\geq$ 85 dBA must participate in the hearing conservation training program except where there is adequate justification for exclusion.
2. These employees must be trained before 2/22/83 and annually thereafter.
3. The training must include at least the following:
 - a. Effects of noise on hearing.
 - b. Hearing Protectors:
 - purpose of
 - advantages, disadvantages, and attenuation of various types
 - instructions on the selection, fitting, use, and care of
 - c. Audiometric Testing:
 - purpose of
 - explanation of test procedures
4. Records of training sessions should be kept, including date, content and employees present.

C. Hearing Protectors

1. All members of job classes which have one or more exposure measurements $\geq$ 85 dBA must be provided hearing protectors except where there is adequate justification for exclusion.
2. There must be an adequate program to ensure that hearing protectors are used during high noise tasks by all members of any job class which has one or more exposure measurements $\geq$ 90 dBA and for any member of a job class with one or more exposure measurements $\geq$ 85 dBA who either have experienced a standard threshold shift or have not yet had a baseline audiogram accomplished for them.
3. Signs should be used, where appropriate, to delineate high noise areas in which the use of hearing protectors is mandatory. One of the following two options should be chosen:
 - a. Identify all areas with noise levels $\geq$ 85 dBA and enforce the use of hearing protectors uniformly across the entire workforce, or

b. Identify areas > 85 dBA and < 90 dBA separately from areas > 90 dBA and enforce the use of hearing protectors on these areas only for employees with a STS or without an established baseline audiogram.

4. At least two types of hearing protectors must be made available to the employees for their selection.
5. An evaluation of hearing protector attenuation must be conducted (Appendix B of Hearing Conservation Amendment).
6. If the NRR method is used, the hearing protectors provided must have a NRR rating minus 7 dB adequate to attenuate exposure below 90 dBA (or 85 dBA for those with standard threshold shift).
7. There must be an adequate program for the individual fitting, cleaning and replacement of reusable hearing protectors.
8. PPG must supervise the correct use of all hearing protectors.

D. Access to Information and Training Materials

1. The standard must be made available to the employees so that they do not have to ask for it.
2. All materials relating to the plant's training and education program required by the standard must be made available to OSHA upon request.

E. Personnel Qualifications

1. Each plant's audiometric testing program shall be under the supervision of a licensed or certified audiologist or otolaryngologist or other physician.
2. Audiometric tests must be conducted by:
 - A licensed or certified audiologist, otolaryngologist, or other physician, or by a
 - technician certified by the Council of Accreditation in Occupational Hearing Conservation

F. Annual Audiometric Tests

1. Audiometric testing must be made available to all members of job classes which have one or more exposure measurement ≥ 85 dBA except where there is adequate justification for exclusion.
2. Testing must be reoffered to affected employees annually, even though they may have previously refused to participate.

3. Audiometric examinations must be conducted so as to meet the specifications of Section I of this document ("Audiometric Test Requirements").

G. Baseline Audiograms

1. The "best" audiogram on record must be used as the baseline. The best audiogram will be a valid audiogram which demonstrates the least amount of threshold shift (average of both ears) in the "high" frequencies (average of threshold shifts at 2000, 3000, and 4000 Hz). When two or more audiograms have the same average threshold shift at these frequencies, the one with the least differential between the right and left ear should be chosen as the baseline. If still tied, the oldest audiogram will be chosen.
2. If the "best" audiogram on record is one which was acquired prior to August 22, 1981, it must reasonably meet the following requirements:
 - administered by a professional or a trained technician
 - taken at 500, 1000, 2000, 3000, 4000, and 6000 Hz in a reasonably quiet room
 - equipment was calibrated
 - audiogram must be judged to be valid by the program administrator
3. If existing audiograms are not used as baselines, there must be adequate justification for rejection.
4. Baselines for new employees must be obtained within six months of their first exposure to noise above 85 dBA.
5. New baseline audiograms (taken after August 21, 1981) must meet the requirements outlined in Section I of this document ("Audiometric Test Requirements"), and must be performed after 14 hours without exposure to workplace noise. Employees must be informed of the need to avoid high levels of non-occupational noise exposure during the 14-hour period immediately preceding the audiometric examination.

H. Evaluation of Annual Audiograms and Follow-up Procedures

1. A determination as to whether or not a standard threshold shift has occurred must be made by comparing the annual audiogram to the employee's baseline audiogram. An allowance should be made for the contribution of aging (presbycusis) in the calculation of threshold shift (See OSHA Appendix F).
2. Routine evaluations may be made by an employee qualified to administer audiometric tests or by computer (See Section E of this document).

3. A "Standard Threshold Shift" is defined by OSHA as "a change in hearing thresholds relative to the baseline audiogram of an average of 10 dBA or more at 2000, 3000, and 4000 Hz in either ear."
4. When a standard threshold shift has occurred, a new audiogram should be accomplished within 30 days to verify the first test and/or to determine whether the shift is persistent.
5. Upon verification of a standard threshold shift or when a retest is not possible within 30 days of the original test, the following steps must be taken: [(b) and (c) below may be omitted if the plant physician determines that the standard threshold shift is not work related or aggravated by occupational noise exposure.]
 - a. The new audiogram should be designated as the "revised baseline" and future audiometric results should be evaluated against it.
 - b. An employee who is currently not wearing hearing protectors must be provided them and trained in their use and care.
 - c. An employee who is already using hearing protectors must be refitted, retrained, and provided protectors with greater attenuation, if necessary.
 - d. The employee must be informed of the standard threshold shift, in writing, within 21 calendar days using the suggested letter of notification (attached).
 - e. The plant physician should review the employee's audiometric records, perform a medical examination on the employee, and provide consultation as appropriate.
 - f. The plant physician should determine whether the employee needs to be referred to a certified audiologist or otolaryngologist for further evaluation or testing.
 - g. If further evaluation is deemed necessary, the following information must be provided to the professional performing this evaluation:
 - Copy of the requirements for hearing conservation as set forth by OSHA [29 CFR 1910.95(c)-(n)].
 - Baseline and most recent audiograms of employee referred, including all information specified in Section J of this document.
 - Measurements of background sound pressure levels in the audiometric test booth.
 - Records of audiometric calibrations (daily biological, annual acoustical, and/or exhaustive calibrations).

- h. If further testing is necessary or if it is suspected that a medical pathology of the ears exists which is caused or aggravated by the use of hearing protectors, the employee must be referred to a certified audiologist or otolaryngologist for a clinical examination or evaluation.
 - i. If a medical pathology of the ear unrelated to the use of hearing protectors is suspected, the employee must be informed of the need for an otological examination.
- 6. Whenever an employee's audiogram contains an absolute threshold > 35 dB at any frequency, or whenever the average threshold at 500, 1000, and 2000 Hz is greater or equal to 25 dB in either ear (in both instances, first time only, regardless of the shift from the baseline), he should be referred to the plant physician for examination and consultation.
 - 7. Whenever an annual follow-up exam shows an improvement over the "baseline," the new audiogram should be designated as the "baseline."
 - 8. "Revised baselines" should not be further revised unless a 10dB or greater positive or negative shift occurs at 2000, 3000, and 4000 Hz in either ear.
 - 9. Whenever an annual following exam shows that an earlier determination of a standard threshold shift is not persistent (10dB or greater average negative shift at 2000, 3000, and 4000 Hz in either ear), the employee must be informed of the new audiometric interpretation and the employee's original baseline must be used for all later evaluations. If the employee is exposed to less than 90 dBA of noise, he may discontinue the use of hearing protectors.

I. Audiometric Test Requirements

1. Equipment Specifications

- a. Test must be conducted for each ear separately at 500, 1000, 2000, 3000, 4000, and 6000 Hz.
- b. Audiometric test equipment must meet the specifications of ANSI S3.6-1969.
- c. Audiometric equipment must meet the requirement of Appendix C of the OSHA Hearing Conservation Amendment.
- d. Audiometric tests must be conducted in a booth that has sound pressure levels less than the maximum allowable background octave-band sound pressure levels stated in Appendix D of the OSHA Hearing Conservation Amendment.
- e. Records for (d) must be retained.

2. Equipment Calibration

- a. The functional operation of the audiometer must be checked daily by testing a person with known stable hearing and by listening for distortion.
- b. An acoustic calibration must be performed when deviations > 5 dB (≥ 10 dB) occur in the above test (a) at any frequency.
- c. The calibration must be checked acoustically in accordance with Appendix E of the OSHA Hearing Conservation Amendment each year.
- d. An exhaustive calibration must be performed when deviations > 10 dB (≥ 15 dB) occur in the above test (c) at any frequency.
- e. An exhaustive calibration must be conducted at least every two years in accordance with ANSI S3.6.
- f. Appropriate records must be retained for equipment calibration.

J. Audiometric Test Recordkeeping

1. Employee audiograms must contain the following items:
 - a. Name and job class of the employee.
 - b. Date of audiogram.
 - c. Examiner's name.
2. The following information may be recorded on the individual audiograms. Otherwise, it should be readily available to the individual who interprets the audiogram.
 - a. Date of last acoustic or exhaustive calibration of the audiometer.
 - b. Employee's most recent noise exposure assessment (As defined in "Guidelines for the Implementation of OSHA's Hearing Conservation Amendment," Page one, #2).
 - c. Name of the professional in charge of the audiometric program.
3. These records must be retained in accordance with the PPG Records Retention Manual.

Tom Baldauff
T. E. Baldauff

4/5/84
Date

Date

Dear (employee) _____

We wish to inform you that the results of your audiometric testing have been reviewed. Your audiogram was found to have a Standard Threshold Shift.

An appointment will be made to discuss this result with
(name of physician) _____ and to determine the need for further
evaluation. You will be contacted when this follow-up is scheduled.

Remember to wear all personal protective equipment, including hearing protection, as required by PPG policy and your supervisor.

Very truly yours,

- _____
1) Audiometric technician, or
2) Safety or Employee Relations Representative

(Employee Signature and Date)

5.2 -- PLANT NOISE EXPOSURE REPORT

5.3 -- ENGINEERING STANDARDS FOR PURCHASED EQUIPMENT



ENGINEERING
STANDARD

A4-7003
Revision 0
1/20/84
Page 1 of 5

Applications Standard: Mechanical

TITLE NOISE CONTROL FOR EQUIPMENT

APPROVALS

Senior Mechanical Design Engineer	Industrial Hygiene and Environment Department	Senior Standards Engineer	Manager Engineering Services
E.L. Schultz	T.E. Baldauff	R.R. Cornelius	R.L. Moss

Revisions

Revision 0

SCOPE

This Standard defines permissible levels of noise produced by equipment to be purchased for PPG facilities.

REGULATIONS AND REFERENCES

OSHA 29 CFR 1910.95
PPG Standard P4-0500 Noise Data Sheet
PPG Standard D4-7001 Noise Control Design Criteria



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DEFINITIONS

Decibel. (dB) A unit of noise level measurement, indicating relative difference in power between two signals, one of which is a standard of reference. The number of decibels is 10 times the logarithm to the base 10 of the ratio of the two signals.

A-Weighted Scale. (dBA) Sound level weighted to reflect the approximate response of the human ear to sound.

Frequency. The number of sound vibrations per second, measured in hertz (Hz).

Noise. Unwanted sound.

Octave Band. A band of frequencies in which the ratio of the extreme frequencies is 2:1. The center of the octave band is the geometric average of the upper and lower frequency limits. The preferred octave band centers range from 31.5 Hz to 8000 Hz.

Sound Power Level. (L_w) Sound power, measured in decibels, is 10 times the logarithm to the base 10 of the ratio of the sound power radiated by the source to a reference power of 1 pico-watt, or 10^{-12} watt.
 $L_w = 10 \log w/w_0$

Sound Pressure Level. (L_p) Sound pressure, measured in decibels, is 20 times the logarithm to the base 10 of the ratio of the sound pressure to a reference pressure of 0.0002 dynes/cm². $L_p = 20 \log (p/p_0)$



VENDOR REQUIREMENTS

All acoustical information and noise test results shall be submitted by the vendor on PPG Standard P4-0500, Noise Data Sheet.

Prior to shipment of equipment to PPG, sound level readings may be required to be conducted at the vendor's shop to verify the noise data. PPG reserves the right to witness these tests and to make additional or confirming measurements.

For standard items of equipment on which noise test results for an identical piece of equipment can be submitted, a new test may not be required. The standard test results should be submitted for PPG approval.

A vendor's proposal shall fully describe noise reduction features of any special design required to meet a sound pressure level of 90 dBA, and shall state the cost and the effect on performance. If an acoustical treatment is quoted, the proposal shall contain full details of the composition and mounting of acoustical material, cost, and effect on performance.

An alternate proposal for meeting an overall sound pressure level of 85 dBA shall also be prepared by the vendor.

SOUND LEVEL LIMITATIONS

In order to comply with the sound exposure limits, PPG has adopted sound limits for its equipment. Equipment purchased by PPG for industrial use shall not emit sound pressure levels in excess of those listed in the table below. If the requirements cannot be met with the vendor's standard design, alternatives for a special design or for the standard design with acoustical treatment shall be quoted and furnished as described above in this Standard.

PERMISSIBLE SOUND LIMITS

<u>Octave Band Frequency (Hz)</u>	<u>Maximum Sound Pressure Level (dB) at 3 feet distance</u>
63	109
125	99
250	92
500	87
1000	84
2000	83
4000	83
8000	85
A-weighted (combined frequencies)	90

The total A-weighted L_p of all frequencies combined must not exceed 90 dBA at the vendor's test facility.



TEST INSTRUMENTS

Measurement of overall sound and of octave band sound pressure level shall be made using a sound level meter and an octave band filter set. These instruments shall meet the latest revised ANSI Standards S1.4-1971 (Rev. 1976), General Purpose Sound Level Meters, and S1.11-1966 (Rev. 1976), Octave Band Analyzers.

Instruments shall be calibrated acoustically per instrument manufacturer's recommendations. Calibration shall be made before and after each test.

NOISE TEST REQUIREMENTS

1. Equipment to be tested should be mounted on a hard reflective surface in an echo-free environment.
2. It is desirable to have ambient sound levels within the test location at least 10 dB below the sound level produced by the tested equipment in operation.

If the difference between equipment noise and ambient noise is less than 4 dB, the ambient level is unsatisfactory for noise measurement. If the difference is 10 dB or more, the higher readings are essentially the noise levels generated by the equipment. For differences of 4 to 10 dB, the equipment noise levels shall be determined by applying the following correction values:

<u>Difference between ambient and total sound levels (dB)</u>	<u>Correction to be subtracted from total sound level (dB)</u>
4 to 5	2
6 to 9	1
10	0

3. Test instruments shall be placed so as to avoid the influences of air currents, vibrations, electric or magnetic fields, and any other factors that might affect the accuracy of readings.

The entire area surrounding equipment should be explored to ensure that instruments are placed to measure maximum noise level.

4. Equipment shall be tested at full load, unless otherwise specified.



NOISE TEST REQUIREMENTS (continued)

5. Measurements shall be performed at equally spaced positions around the equipment. The first measurement shall be taken at the position of highest noise level, and subsequent measurements taken at 30 degree intervals around the equipment. Maximum spacing between measuring positions shall be 10 feet.

Microphones shall be positioned 5 feet above the base of the equipment. Horizontal distance between microphone and equipment shall be no less than 3 feet and no greater than 6 feet.

For equipment with established operators' positions, additional noise measurements shall be made at each operator's position.

6. All readings shall be taken with the measuring instruments operating to yield slow speed meter indications. For fluctuating sounds with variations less than 5 dB, visual averages shall be taken. For sounds yielding greater meter fluctuations, maximum and minimum meter indications shall also be recorded.

7. At each location, sound pressure levels shall be measured on the A-scale of the sound level meter and should be recorded as dBA. Frequency data shall be measured within octave bands identified either at preferred center frequencies of 63, 125, 250, 500, 1000, 2000, 4000, and 8000 Hz, or within octave bands of 20 to 75, 75 to 150, 150 to 300, 300 to 600, 600 to 1200, 1200 to 2400, 2400 to 4800, 4800 to 9600 Hz.

If sound levels as measured on the A-scale are less than 85 dB, frequency data need not be obtained unless specifically requested.

8. Where the noise level in any octave band varies more than 5 dB during an operating period or cycle, measurements at each phase or stage normally encountered are required.

9. If sound power levels are known, they should also be reported (in watts or dB).

END



ENGINEERING
STANDARD

D4-7001
Revision 1
1/23/84
Page 1 of 4

Design Standard: Mechanical

TITLE NOISE CONTROL DESIGN CRITERIA

APPROVALS

Senior Mechanical Design Engineer	Industrial Hygiene and Environment Department	Manager Standards	Manager Engineering Services
E.L. Schultz	T.E. Baldauff	L.H. Gunby	R.L. Moss

Revisions

Revision 1 - Standard has been completely rewritten.

SCOPE

This Standard defines permissible levels of noise produced by equipment to be purchased for PPG facilities. Methods for measuring noise levels are included.

REGULATIONS AND REFERENCES

OSHA 29 CFR 1910.95
PPG Standard P4-0500 Noise Data Sheet
PPG Standard A4-7003 Noise Control for Equipment



DEFINITIONS

Decibel. (dB) A unit of noise level measurement, indicating relative difference in power between two signals, one of which is a standard of reference. The number of decibels is 10 times the logarithm to the base 10 of the ratio of the two signals.

A-Weighted Scale. (dBA) Sound level weighted to reflect the approximate response of the human ear to sound.

Frequency. The number of sound vibrations per second, measured in hertz (Hz).

Noise. Unwanted sound.

Octave Band. A band of frequencies in which the ratio of the extreme frequencies is 2:1. The center of the octave band is the geometric average of the upper and lower frequency limits. The preferred octave band centers range from 31.5 Hz to 8000 Hz.

Sound Power Level. (L_w) Sound power, measured in decibels, is 10 times the logarithm to the base 10 of the ratio of the sound power radiated by the source to a reference power of 1 pico-watt, or 10^{-12} watt.
 $L_w = 10 \log w/w_0$

Sound Pressure Level. (L_p) Sound pressure, measured in decibels, is 20 times the logarithm to the base 10 of the ratio of the sound pressure to a reference pressure of 0.0002 dynes/cm². $L_p = 20 \log (p/p_0)$

VENDOR REQUIREMENTS

All acoustical information and noise test results shall be submitted by the vendor on PPG Standard P4-0500, Noise Data Sheet. This Data Sheet shall be attached to the Equipment Data Sheet used to describe the equipment details. PPG Applications Standard A4-7003 will also be forwarded to the vendor to describe noise testing and noise limits.

Prior to shipment of equipment to PPG, sound level tests may be required to be conducted by the vendor at his expense. PPG reserves the right to witness these tests and to make additional or confirming measurements.

A vendor's proposal shall fully describe noise reduction features of any special design, and shall state the cost and effect on performance, if any. If an acoustical treatment is quoted, the proposal shall contain full details of the composition and mounting of acoustical material, cost, and effect on performance.



VENDOR REQUIREMENTS (continued)

An alternate proposal for meeting an overall sound pressure level of 85 dBA, compared with warranty requirements of 90 dBA, shall also be prepared by the vendor.

SOUND EXPOSURE REGULATIONS

OSHA regulations (29 CFR 1910.95) state that employees may not be exposed continuously for an 8-hour day to noise in excess of 90 dBA as a time-weighted average (TWA). OSHA has proposed to reduce the permissible noise level to 85 dBA. All employees exposed to 85 dBA or greater as an 8-hour TWA must take part in a comprehensive hearing conservation program.

It is incumbent upon PPG to consider these government regulations and the new OSHA proposal before purchasing equipment so that noise problems can be prevented before they are created.

In attempting to comply with the regulations, location of equipment should be considered. Since OSHA prohibits only excessive employee exposure to noise, noisy equipment located in seldom occupied areas is often acceptable. On the other hand, two acceptable pieces of equipment located in the same area may combine to produce unacceptable noise levels in that area. Furthermore, equipment installation conditions, such as room size, materials of construction of walls, ceilings, and floors, mounting system, and location in room or facility, can significantly affect the sound pressure levels emitted by the equipment.

For assistance in determining whether sound levels will be acceptable, the appropriate division industrial hygiene section should be consulted in the following situations: when the total A-weighted L_p of all frequencies combined as measured by the vendor exceed 85 dBA; when the cost of special acoustical treatment is thought to be excessive; when it is suspected that combined equipment noises may be a problem.

The appropriate division industrial hygiene section must be supplied with the Noise Data Sheets, plant equipment layouts, information noise levels of adjacent equipment (> 80 dBA), the location of nearby work stations, and the projected frequency of employee entry into the potential high noise area.



SOUND LEVEL LIMITATIONS

In order to comply with OSHA's noise exposure limits, PPG has adopted noise limits for its equipment. Equipment purchased by PPG for industrial use should not emit sound pressure levels in excess of those listed in the table below. If the requirements cannot be met with the vendor's standard design, alternatives for a special design or for the standard design with acoustical treatment shall be quoted and furnished as described above in this Standard.

PERMISSIBLE SOUND LIMITS

<u>Octave Band Frequency (Hz)</u>	<u>Maximum Sound Pressure Level (dB) at 3 feet distance</u>
63	109
125	99
250	92
500	87
1000	84
2000	83
4000	83
8000	85
A-weighted (combined frequencies)	90

The total A-weighted L_p of all frequencies combined must not exceed 90 dBA at the vendor's test facility.

END



ENGINEERING
STANDARD

P4-0500
Revision 0
1/23/84
Page 1 of 5

Practices Standard: Mechanical

TITLE NOISE DATA SHEET Equipment No. _____

PPG Project No. _____ Equipment Type _____

Location _____ Trade Name _____

PPG Purchase Order No. _____ Manufacturer _____

Vendor _____ Model No. _____

Vendor's Order No. _____ Serial No. _____

Noise Inquiry No. _____ Size _____

Rev. _____ By _____ Date _____ Capacity _____

Check One: ☐ Std. Design ☐ Special Horsepower
Design

☐ Acoustical Treatment Utilized* Nominal Speed _____

* Brief Description of Proposed Acoustical Treatment _____

Test Results at Point with Highest Noise Levels

Octave Band Frequency (Hz)	Maximum Sound Pressure Level (dB at 3 Feet)	Measured Equipment Sound Pressure Level (dB at 3 Feet)
63	109	_____
125	99	_____
250	92	_____
500	87	_____
1000	84	_____
2000	83	_____
4000	83	_____
8000	85	_____
Overall	90 dBA	_____ dBA**

** If greater than 85 dBA, an alternate proposal for meeting an overall SPL of 85 dBA must also be prepared for PPG's consideration.

NOTE: Sketch test room, equipment location, and location of measurements on page 3. Provide individual measurements on page 4.



SUPPORTING DATA (Must be included with proposal)

☐ Test data for identical equipment

☐ Test data for similar equipment
Describe equipment: _____

☐ Theoretical calculations

☐ Other data (explain): _____

WE GUARANTEE

☐ Our equipment will not exceed the maximum sound pressure level
of _____ under normal conditions of installation and use.

☐ Our equipment will not exceed the maximum sound pressure levels
listed in page one of this data sheet under normal conditions of
installation and use.

☐ Other: _____

Vendor _____

Represented By _____ Title _____

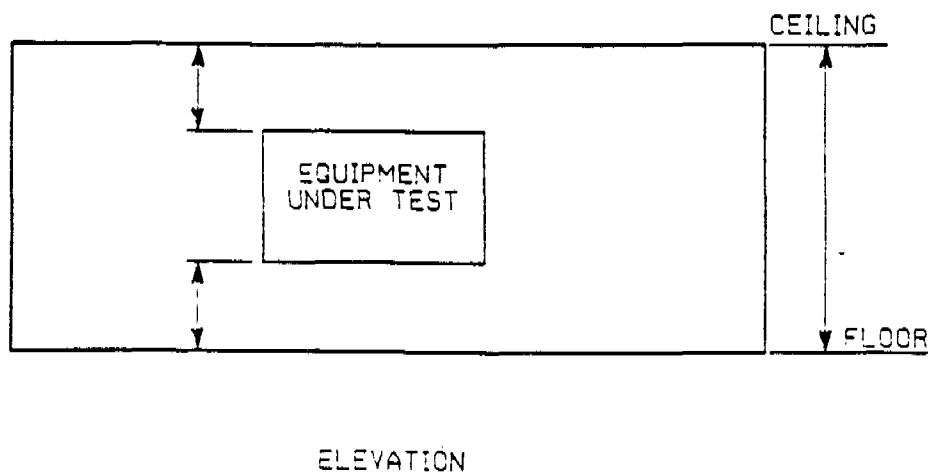
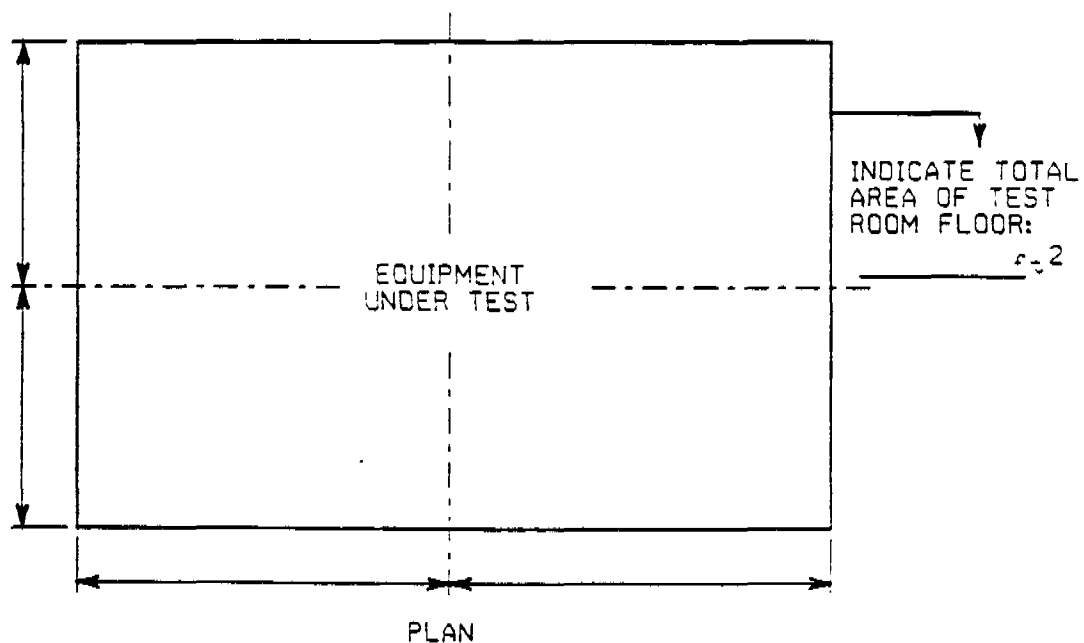
Signature _____ Date _____

COMMENTS:



NOISE MEASUREMENT TEST LOCATION DATA

Indicate on the sketch below the position of the equipment as placed in the room and orient the machine by some identifying features. Indicate noise test locations.





NOISE MEASUREMENT TEST LOCATION DATA (continued)

I. Test Room Description

Vendor's Plant _____
Special Test Room _____ Anechoic Space _____
Dimensions:
Height _____ Width _____ Length _____
Materials:
Floor _____ Walls _____ Ceiling _____

II. Test Equipment Floor Support

Structural bedplate _____ Concrete _____ Vibration
Mounts _____

III. Operating Conditions

Actual Speed _____
Input/Output _____
Load (% Capacity) _____
Operating Point _____

MEASURED NOISE LEVELS

[illegible]

Octave Band Analyzer Mfr.	Model No.	Serial No.

Sound Level Meter	Mfgr.	Model No.	Serial No.

Microphone	Mfgr.	Type	Serial No.
------------	-------	------	------------

Calibration	Before	After
1	100.0	100.0
2	100.0	100.0
3	100.0	100.0
4	100.0	100.0
5	100.0	100.0
6	100.0	100.0
7	100.0	100.0
8	100.0	100.0
9	100.0	100.0
10	100.0	100.0
11	100.0	100.0
12	100.0	100.0
13	100.0	100.0
14	100.0	100.0
15	100.0	100.0
16	100.0	100.0
17	100.0	100.0
18	100.0	100.0
19	100.0	100.0
20	100.0	100.0
21	100.0	100.0
22	100.0	100.0
23	100.0	100.0
24	100.0	100.0
25	100.0	100.0
26	100.0	100.0
27	100.0	100.0
28	100.0	100.0
29	100.0	100.0
30	100.0	100.0
31	100.0	100.0
32	100.0	100.0
33	100.0	100.0
34	100.0	100.0
35	100.0	100.0
36	100.0	100.0
37	100.0	100.0
38	100.0	100.0
39	100.0	100.0
40	100.0	100.0
41	100.0	100.0
42	100.0	100.0
43	100.0	100.0
44	100.0	100.0
45	100.0	100.0
46	100.0	100.0
47	100.0	100.0
48	100.0	100.0
49	100.0	100.0
50	100.0	100.0
51	100.0	100.0
52	100.0	100.0
53	100.0	100.0
54	100.0	100.0
55	100.0	100.0
56	100.0	100.0
57	100.0	100.0
58	100.0	100.0
59	100.0	100.0
60	100.0	100.0
61	100.0	100.0
62	100.0	100.0
63	100.0	100.0
64	100.0	100.0
65	100.0	100.0
66	100.0	100.0
67	100.0	100.0
68	100.0	100.0
69	100.0	100.0
70	100.0	100.0
71	100.0	100.0
72	100.0	100.0
73	100.0	100.0
74	100.0	100.0
75	100.0	100.0
76	100.0	100.0
77	100.0	100.0
78	100.0	100.0
79	100.0	100.0
80	100.0	100.0
81	100.0	100.0
82	100.0	100.0
83	100.0	100.0
84	100.0	100.0
85	100.0	100.0
86	100.0	100.0
87	100.0	100.0
88	100.0	100.0
89	100.0	100.0
90	100.0	100.0
91	100.0	100.0
92	100.0	100.0
93	100.0	100.0
94	100.0	100.0
95	100.0	100.0
96	100.0	100.0
97	100.0	100.0
98	100.0	100.0
99	100.0	100.0
100	100.0	100.0

Accessories Used _____

REMARKS _____

END

5.4 -- MEMO ON FILLING OUT A/P FORMS FOR NOISE SAMPLES

File Noise
INTER-OFFICE CORRESPONDENCE

Date: November 30, 1981

From: T. E. Baldauff

Location: 5 West

Subject: Noise Monitoring

As you are well aware, the new OSHA noise amendment requires that the noise exposure of all employees be determined by February 22, 1981. Dosimetry has typically been the method by which PPG's plants have measured noise in the past and though OSHA specifically allows other methods to be used, dosimetry should continue to be used when available. Environmental Affairs believes that changes and clarifications need to be made at this time in the interpretation and recording of noise exposures which are determined by dosimetry.

Currently, most plants record the results of noise dosimetry in "percent of allowable exposure". This measure alone is not sufficient for determining compliance or non-compliance to the noise standard. The total time of the measurement as a fraction of the total time of exposure must also be factored into the result. In other words, a 45 percent noise dose measured over 6 1/2 hours cannot be interpreted as being below the action level of 85 dBA unless the remainder of the work day was spent in an area with noise levels all less than 80 dBA.

There are several approaches to noise measurement that can be used which would eliminate most of the ambiguity which currently exists in certain noise exposure data. At least two are practical on a routine basis.

The first approach would be to place the noise dosimeter on the worker before he goes to his work station at the start of the work shift and to remove it after he leaves his station at the end of the shift. The resulting full-shift noise dose could then be considered as his "actual" percent dose.

The other approach involves measuring the employee's noise dose over only a fraction of the work day (>7 hours recommended). The resulting dosimeter reading must then be converted to "actual" percent dose by using the following formula:

$$\text{Dosimeter Reading} \times \frac{\text{Duration of Work Shift}}{\text{Duration of Measurement}} = \text{Actual Percent Dose}$$

When using the second approach, the lunch hour should not be sampled. If the dosimeter is inadvertently left on during lunch, the duration of the lunch period should either be subtracted from the "duration of measurement" or added to the "duration of work shift".

November 30, 1981
Page 2

Of these two methods of measuring noise dose, the full-shift monitoring is the most desirable. However, partial shift monitoring is acceptable as long as the noise exposure levels encountered during the unsampled portions of the day are not greater than those encountered during the sampled portion.

Finally, because the new noise amendment mandates both a permissible exposure level and an action level for TWA noise exposures expressed in dBA, Environmental Affairs is proposing that "actual percent dose" (D) be converted to dBA for computer storage using Table A-1 in the OSHA noise amendment (attached) or using the formula: $TWA (dBA) = 16.61 \log_{10} (D/100) + 90$. Attached is a table which demonstrates several examples of such corrections.

The PPG IPEL for noise will be changed to 90 dBA with an action level of 85 dBA. The IPEL table which will soon be put into the area/personnel monitoring computer file will reflect this change. All employees with noise exposures in excess of 85 dBA would be required to participate in PPG's hearing conservation program.

Attached is a suggested format for filling out the A/P computer worksheets so that all important information is recorded. Since current worksheets do not list dBA as a unit of measurement, "other" should be circled in the "results" section.

If there are any comments or objections to this proposal, please contact me. Otherwise, implementation can begin immediately.

T. E. Baldauff

T. E. Baldauff

/ta

Attachment

cc: Z. G. Bell
B. A. Concoby
S. P. Illes

SL 071625

Attachment 1

<u>Duration of Sample (min.)</u>	<u>Dosimeter Reading (percent)</u>	<u>Duration of Workshift (min.)</u>	<u>Actual Percent Dose (%)</u>	<u>dBA (TWA)</u>	<u>Comment</u>
240	50	480	100	90	• Monitored partial exposure-- reading artificially low
480	50	480	50	85	• Monitored full shift-- reading okay
420	87.5	480	100	90	• Monitored partial exposure-- reading artificially low
400	48	480	57	86	• Monitored partial exposure-- reading artificially low
380	79	480	100	90	• Monitored partial exposure-- reading artificially low

Attachment 2

Not Necessary

SAMPLE NUMBER 5 14		SAMPLE DATE MO. DAY YR. 15 20		COMPOUND 21 26		START TIME (2400 HR.) 27 30		DURATION (IN MINUTES) 31 34 XYZ		OPERATIONS 35	
(MAKE NOTE HERE IF USDBA IS EXCEEDED)						(RECORD DURATION OF MEASUREMENT)					
DEPT. 38 41		ANALYTICAL METHOD 42 50 1.5 dBA ON		ANALYSIS DATE MO. DAY YR. 52 57		SAMPLING DEVICE 58 77 GEN RAD 1954 DOSIMET		P		1	
SAMPLE VOLUME 47		(RECORD DOSIMETER READING IN "SAMPLE VOLUME") RESULT XYZ%		(LIST DOSIMETER THRESHOLD AND CRITERIA LEVEL SETTING) XY THRESHOLD XY CRIT A		COLLECTION MEDIUM 58 77		P		2	
(RECORD DURATION OF WORKSHIFT) 27 36 T. EXP. XYZ		SOCIAL SECURITY NUMBER 38 46		PROTECTIVE DEVICE TYPE APPROVED 47 49 50 Y N		OVER-STANDARD? Y N 51		JOB TITLE 58 63		P 3	
(RECORD TWA EXPOSURE IN dBA) 27 34 XYZ		PPM UCM PCT PPB MCM FML OTH 35 - 37		EMPLOYEE NAME 58 77				P		4	
PPG STD. 29 34 9.0								P		5	
								P		6	
								P		8	

SIGNED _____ APPROVED _____

FORM 3362 REV 7-77

SL 071627

6.0 Protective Clothing

6.1 -- SELECTION OF PROTECTIVE EQUIPMENT GUIDE

SELECTION OF PROTECTIVE CLOTHING FOR PROTECTION FROM POTENTIAL CHEMICAL HAZARDS

PURPOSE:

The purpose of this document is to provide guidance to operating units in their selection of garments (gloves, aprons, suits, boots, etc.) for protection against chemical hazards.

CONSIDERATIONS:

Many considerations need addressing when selecting garments for protection against chemical hazards. These include:

- anticipated use
- cleaning/laundrying needs
- methods of cleaning/laundrying
- permeation potential
- length of anticipated use
- style and size of protective material needed

MATERIALS OF CONSTRUCTION:

In selecting garments for protection against specific job hazards, three factors must receive paramount consideration. These are:

- type of base fabric (if used)
- type of impermeable coating
- method of garment construction

BASE FABRICS:

- Determines the general characteristics of clothing--stretch, weight and tensile strength. Garments lose all rigidity (and often some chemical resistance) when made without a base fabric. While this is acceptable--possibly desirable in some gloves--the lack of at least some rigidity is not desirable in most other garments.
- Fabrics generally used:
 - a) cotton -- cheap, comfortable, helps dissipate body moisture inside clothing, good wet strength
 - b) polyester -- cheaper than cotton, lighter and tougher than cotton, comfortable
 - c) nylon -- expensive, lightest, most durable base fabric

IMPERMEABLE COATINGS:

- Bonded to base fabric to seal out contaminants.
- May improve the tensile strength of fabric.
- Coating materials generally used:
 - a) SBR (nitrile) -- Nitrile is a rubber type compound that is cheap, flexible, waterproof, highly abrasion resistant but decomposes when exposed to oils for long times.
 - b) Neoprene -- Neoprene is a synthetic compound that offers protection from many potential workplace hazards. Depending on the degree of neoprene in the coating, a garment of this material can be effective against oil, alcohols, most ketones and aldehydes, organic esters, many salts, alkalines and many inorganic acids.
 - c) Polyvinyl Chloride (PVC) -- PVC is a very versatile, medium priced material that is resistant to a wide range of alcohols, acids, salts, alkalines and other substances. The material is soft and comfortable, while having good resistance to puncture, abrasion and tear.
 - d) Polyurethane -- Polyurethane is a very expensive material. It is one of the toughest materials normally available and is impervious to most hazardous chemicals (except some acids). It is very lightweight and highly resistant to abrasion.
 - e) Polyvinyl Alcohol (PVA) -- PVA is a material that shares some of the physical characteristics with PVC. It has good resistance to tear, puncture and abrasion. Its major shortcoming is that it dissolves in the presence of moisture, thus preventing conventional washing.
 - f) Viton -- Viton is a specially made, tough compound that is very expensive. It was made for handling chlorinated and aromatic solvents. As a result, protective clothing made from this material exhibits a high degree of impermeability to these solvents. This material is also acceptable for use in or around water and waterbased solutions. This material is used mainly in the manufacture of gloves.
 - g) Others -- There are other materials used as coatings of protective clothing. However, due to their limited use, the vendor and/or manufacturer should be contacted for their serviceability and availability.

CONSTRUCTION:

- Sizing

To save on fabric, some manufacturers "cut down on their sizing." These manufacturers' clothing sizes tend to run small. This could result in early failures around seams.

- Coating Adhesion

The coating adhesion can be tested by scraping with a coin or metal fingernail file. If the coating scrapes off easily, the garment has a poor coating adhesion.

- Seams

Seams are the most vulnerable part of protective clothing. Threads in seams must not be exposed. Many modern fabrics do not use stitched seams but cemented seams. These seams are then vulcanized. A similar seam is available on PVC and other synthetics.

- Coat Type Garment Sleeves

These are generally three types of sleeves that are widely used on protective garments. These are:

- a) Set-in Sleeves -- This is the traditional "tailored suit" method of attaching a sleeve to the jacket. It consists of a seam all around the arm. Arm movement is usually somewhat restricted with this sleeve.
- b) Raglan Sleeves -- These sleeves have seams above and below the shoulder. If these seams are of the stitched type, they may rip out under the arm after little use.
- c) Batwing Sleeve -- These sleeves have two long seams. One of these is in top of the arm and runs from the neck to the wrist. One is under the arm, running from the waist all the way down the jacket. This type of sleeve is comfortable and very durable.

- Shoe/Boot Soles

There are two common ways of attaching soles to chemical protective shoes or boots. These are:

- a) Cementing -- A molded sole is cemented to the upper part of the boot. This cemented "seam" has been found to be the source of a leak.
- b) Vulcanized -- The sole is attached to the boot and then vulcanized. This is the best method for attaching seams to minimize leaking.

POSSIBLE EFFECTS ON PROTECTIVE CLOTHING BY CHEMICALS:

The effects that a chemical may have on protective clothing can be classified into three headings:

- Penetration

Penetration is the flow of the liquid chemical through parts of the garment such as zippers, stitched seams, or imperfections such as pores, punctures or other imperfections.

- Degradation

Degradation is the deterioration in one or more physical properties of protective clothing material.

- Permeation

Permeation is the process which allows a chemical to pass through a protective film by molecular diffusion rather than through penholes, pores, or other visible openings.

Published Literature

Recently, several articles have been published on the subject of permeation/degradation testing. One of the best is that published by C.W. Schlatter of Becton Dickinson (Attachment #1). This work was instrumental in their development of their informative pamphlet entitled "Edmont Chemical Resistance Guide" (Attachment #2). Gary Nelson and T. T. Broun have also done work in this area (Attachment #3).

CHOOSING THE CORRECT GARMENT:

It is often possible to select a garment from the permeation/degradation testing of others. As is apparent, this is the easiest and most inexpensive way. However, if the tables that have been developed by others do not suffice because of anticipated use or other conditions or if the findings of several authors conflict, the garment material may be tested.

OUTSIDE TESTING:

For those who have no inhouse garment testing cell or desire to have a garment tested by an outside contractor, Environmental Affairs' assistance is available. However, should a number of requests be received at once or over a short period of time, Environmental Affairs will be forced to prioritize the garments for testing to comply with existing time and financial constraints.

The procedure for Environmental Affairs' assistance is:

- Notify, in writing, the Industrial Health and Hygiene Section of the Environmental Affairs Department of material(s) requiring testing.
- Include a brief summary of the anticipated use of this material (including the chemicals that it will be exposed to).
- Send samples of the material to be tested. If possible, send a complete garment. If not, send a sample of the material that is one foot square.

Environmental Affairs will forward the garment(s) or material samples, along with the conditions of the test, to the contractor. Results of the test will be forwarded to the requesting unit when received from the contractor.

7.0 Respiratory Protection

7.1 -- CHEMICALS' AUDIT CHECKLIST

RESPIRATORY PROTECTION PROGRAM REVIEW AND COMPLIANCE ASSESSMENT

Answer/Reference to
Working Paper or
Document

I. WRITTEN RESPIRATORY PROTECTION PROGRAM

Is there a written respiratory protection program that appropriately addresses the following:

A. OSHA Requirements

1. Selection of respirators on the basis of the hazard to which the worker is exposed (specification of respirator for routine and non-routine uses).
2. Training of users (proper use and limitation).
3. Respirator cleaning.
4. Respirator storage.
5. Respirator inspection.
6. Work area surveillance.
7. Inspection and evaluation of program to determine effectiveness.
8. Medical examination.
9. Use of approved or accepted respirators.

B. Recommended Items

1. Permissible practice.
2. Employee Responsibility.
3. Employer Responsibility.
4. Program Administration.
5. Recordkeeping.
6. Facial hair policy.
7. Fit-testing protocol.

Answer/Reference to
Working Paper or
Document

II. RESPIRATOR SELECTION AND USE

A. For each job class/task is selection based on ANSI Z88.2 1969 (1980) and specifically the following considerations:

1. NIOSH/MSHA approved respirators. _____
2. Contaminant and Operation Considerations
 - a. Concentration of contaminants -- actual and potential. _____
 - b. Eye irritation and other physiological effects. _____
 - c. Operation, process, and work area characteristics. _____
 - d. Employee activities (work rate, frequency, and duration of use). _____
 - e. Type of use -- emergency vs. routine. _____
 - f. IDLH Considerations
 - Contaminant concentration. _____
 - Location of hazardous area with respect to a location having respirable air. _____
 - Oxygen deficiency. _____
3. Respirator Capabilities and Limitation
 - a. Mode of Operation
 - Atmosphere supplying. _____
 - Air-purifying. _____
 - b. Face-piece pressure. _____
 - c. IDLH/Oxygen deficiency considerations. _____
4. Protection Factors _____

Answer/Reference to
Working Paper or
Document

- B. Is an appropriate respirator specified for each routine and non-routine job task? _____
- C. Do the written procedures for IDLH situations require the following:
1. An additional worker is present. _____
 2. Communications (visual, voice, or signal line) are maintained. _____
 3. The stand-by worker has proper rescue equipment. _____

III. AIR QUALITY AND CYLINDERS REQUIREMENTS

A. Air Quality

1. If oxygen is used, is it USP grade for medical or breathing oxygen? _____
2. If breathing air is used, does it meet Grade D requirements of Compressed Gas Association Commodity Specification G7.1-1966?
 - a. O_2 - 19.5-23.5% _____
 - b. Condensed hydrocarbons - 5 mg/m³ _____
 - c. CO - 20 ppm _____
 - d. CO₂ - 1000 ppm _____
 - e. Odor _____
3. Are air-line couplings incompatible with other gas outlets? _____

B. Cylinders

1. Are cylinders tested and maintained per DOT (49CFR Part 178)? _____
2. Are cylinders appropriately marked per ANSI Z48.1-1954, etc? _____

Answer/Reference to
Working Paper or
Document

- a. Chemical or common name marked on cylinder with stencil, stamp, or label that is not easily removed.
- b. Lettering is of contrasting color and 3/16 inch.

C. Compressors

- 1. Is compressor situated so as to avoid entry of contaminated air?
- 2. Are sorbent beds and filters used? Is there a change-out schedule?
- 3. Is there a receiver of sufficient capacity to allow a user to escape in the event of a compressor failure? Are there alarms to indicate compressor failure and overheating?
- 4. If an oil-lubricated compressor is used, does it have a high temperature or CO alarm? If only a high temperature alarm, is CO checked periodically?

IV. TRAINING

A. OSHA Requirements for Respirator Users

- 1. Are users trained by a competent person?
- 2. Does the training include:
 - a. Workers to handle and wear respirators in a normal and test atmosphere?
 - b. How to wear, adjust, and determine proper fit?
 - c. The use and limitations of each respirator?
- 3. Are the training methods appropriate?
- 4. Is the frequency of training sufficient?

Answer/Reference to
Working Paper or
Document

B. Recommended Training Provisions

1. Users

- a. Reasons for using respirators. _____
- b. Nature, extent, and effects of respiratory hazards. _____
- c. Recognizing and responding to emergency situations. _____
- d. Inspection to assure proper operation. _____
- e. Maintenance and storage procedures (if applicable). _____
- f. Cleaning procedures (if applicable). _____
- g. Employee's Responsibilities
 - Use respirator according to instructions and training. _____
 - Reporting malfunction. _____
 - Guarding against damage. _____
- h. Regulations concerning respirator use. _____

2. Supervisor Training

- a. Basic respiratory protection practices. _____
- c. Procedures for issuance, inspection, maintenance, and storage. _____
- d. Use of respirators. _____
- e. Regulations concerning respirator use. _____
- f. Training assistance if required to train users. _____

V. FIT-TESTING

A. OSHA Requirements

- 1. Are all persons wearing negative pressure respirators fit-tested? _____

Answer/Reference to
Working Paper or
Document

B. Recommended Provisions

1. Is protocol written?
2. Is protocol appropriate?
3. Are appropriate records kept?
4. Is retesting conducted at an adequate interval?

VI. INSPECTION, MAINTENANCE AND CARE

A. Program Content

1. Inspection
2. Cleaning and Sanitizing
3. Part Replacement and Repair
4. Storage

B. Inspection

1. Frequency

- a. Are all respirators inspected routinely before and after each use?
- b. Are respirators inspected when cleaned?
- c. Are emergency-use respirators and SCBAs inspected monthly and after each use?

2. Content

- a. Tightness of connections.
- b. Condition of facepiece, valves, valve covers, cartridge and canisters, connecting tubes, air bases, head strap, and harnesses.
- c. Cylinder air pressure fully charged.
- d. Proper function of regulations, alarms, and other warning devices.

Answer/Reference to
Working Paper or
Document

3. Are records of findings maintained for emergency use?
-

C. Cleaning and Sanitizing

1. Is there a schedule for cleaning and sanitizing of routinely used respirators?
-
2. Are respirators used by more than one person cleaned and sanitized after each use?
-
3. Are emergency use respirators cleaned and sanitized after each use?
-

D. Part Replacement and Repair

1. Are air-purifying cartridges replaced prior to breakthrough?
-
2. Are the replacement parts designed for the respirator and installed according to the manufacturer's recommendation?
-
3. Is part replacement and repair conducted by a trained person?
-
4. Are reducing or admission valves or regulations returned to the manufacturer or to a trained technician for adjustment or repair?
-

E. Storage

1. Are respirators stored properly to prevent contamination or damage?
-
2. Are emergency use respirators stored so that they are easily accessible?
-

VII. INSPECTION AND EVALUATION OF PROGRAM

A. OSHA Requirements

1. Are routine inspections conducted in the workplace to assure proper selection, use, and maintenance of the respirator?
-

Answer/Reference to
Working Paper or
Document

2. Are employee's feedback solicited on comfort, breathing ability, visibility, communication, job performance, and confidence in facepiece fit?
-

B. Recommended Provisions

1. Is an annual review of the respirator program conducted to determine the effectiveness of the program?
-
2. Is this review written?
-

VIII. RECORDKEEPING

A. OSHA Requirements

1. Inspection dates and findings for SCBAs and emergency use respirators?
-

B. Recommended Records

1. Types of respirator(s) specified for each job class/task?
-
2. Cartridge/canister change-out?
-
3. Training topics and attendees?
-
4. Fit-test results?
-
5. Air quality test results?
-
6. Medical exam certifications?
-
7. Compressor sorbent and filter change-out?
-
8. Program review and corrections?
-

7.2 -- PLANT WRITTEN RESPIRATORY PROTECTION PROGRAM

8.0 Ventilation For
Contaminant Control

8.1 -- DESIGN, MAINTENANCE, AND PROPER USE OF LAB HOODS

PPG CHEMICALS'

DESIGN, MAINTENANCE AND PROPER UTILIZATION OF LABORATORY HOODS

I. OBJECTIVE

The prime objective of this procedure is to assure that all laboratory hoods are designed and operated in accordance with good industrial hygiene practices and that these hoods are in compliance with all state and federal regulations.

II. DEFINITIONS AS PER OSHA

- A. Laboratory Hood. A device enclosed except for necessary exhaust purposes on three sides and top and bottom designed to draw air inward by means of mechanical ventilation, operated with insertion of only the hands and arms of the user, and in which potentially hazardous substances are used.
- B. Walk-In Hood. As in A, except that front opening extends to the floor providing access of the entire body into the hood for the purpose of setting up or tearing down certain apparatus of such size and nature as to preclude their use in a conventional laboratory hood.
- C. Face Velocity. The linear flow rate of air through the open face of the hood measured perpendicularly to the plane of the hood opening.
- D. Low or Moderate Toxicity Materials. Materials or chemicals having PPG Internal Permissible Exposure Limits (IPELs) or American Conference of Governmental Industrial Hygienists' (ACGIH) Threshold Limit Values (TLVs) of greater than 10 ppm or 0.1 mg/m³.
- E. High Toxicity Materials. Materials or chemicals having PPG IPELs or ACGIH TLVs of less than or equal to 10 ppm or 0.1 mg/m³.
- F. Capture Velocity. The air velocity at any point in front of the hood or at the hood opening necessary to overcome opposing air currents and to capture contaminants at that point.
- G. TLV. A guideline to the airborne concentration of a particular substance for which it is believed that nearly all workers may be exposed (individually) 8 hours a day for 40-hour work weeks over a working lifetime without adverse effects. These guidelines are published for common chemicals in Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment . . ., published once a year by the ACGIH (see Ref. A)

H. IPEL. As in K, except that they have been established based on the latest scientific literature and reflect the professional judgments of PPG health professionals (see Ref. C)

I. Units.

mg/m³ -- milligrams of contaminant per cubic meter of air
fpm -- feet per minute
cfm -- cubic feet per minute
ppm -- parts (by volume) of contaminant per million parts of air

III. HOOD DESIGN AND FUNCTION PARAMETERS

A. Supply Air Distribution

For typical operations at a laboratory fume hood, the worker stands at the face of the hood and manipulates the apparatus in the hood. The indraft at the hood face creates eddy currents around the worker's body which can drag contaminants in the hood back to the body and up to the breathing zone. The higher the face velocity, the greater the eddy currents. For this reason, higher face velocities do not necessarily result in improved protection.

Room air currents have a large effect on the performance of the hood. Thus, the design of the room air supply distribution system is as important in securing good hood performance as is the face velocity of the hood. ASHRAE research project RP-70 results, reported by Caplan and Knutson (see Ref. D), concludes in part:

1. Lower breathing zone concentrations can be attained at 50 cfm/sq. ft. with poor air distribution. With a good air supply system, and tracer gas released at 8 liters per minute inside the hood, breathing zone concentrations can be kept below 0.1 ppm and usually below 0.01 ppm.
2. The terminal throw velocity of supply air jets should be no more than 1/2 to 2/3 the hood face velocity; such terminal throw velocities are far less than conventional practice.
3. Perforated ceiling panels provide a better supply system than grilles or ceiling diffusers in that the system design criteria are simpler and easier to apply, and precise adjustment of the fixtures is not required.

For the reasons described, an increased hood face velocity may be self-defeating because the increased air volume handled through the room makes the low velocity distribution of supply air more difficult.

B. Selection of Hood Face Velocity

The interaction of supply air distribution and hood face velocity makes any blanket specification of hood face velocity inappropriate. Higher hood face velocities will be wasteful of energy and may provide no better or even poorer worker protection. The performance test developed by Caplan and Knutson may be used as a specification. The specified performance should be required of both the hood manufacturer and the designer of the room air supply system.

The specification takes the form: xx AU YYY where:

xx = tracer release rate in hood using the specified diffuser apparatus. Rates are as follows --

- 1 liter/minute approximates pouring volatile solvents back and forth from one beaker to another.
- 4 liters/minute is an intermediate rate between 1 lpm and 8 lpm.
- 8 liters/minute approximates violently boiling water on a 500 watt hotplate.

(Other release rates can be specified for special cases.)

YYY = control level, ppm, at the breathing zone of the worker.

AU = "as used" in the laboratory. "AM" would indicate "as manufactured" presumably tested in the manufacturer's test room.

Any well-designed airfoil hood, properly balanced, can achieve < 0.10 ppm control level when the supply air distribution is good. Therefore, it would seem appropriate that the "AM" requirement would be < 0.10 ppm. The "AU" requirement involves the design of the room supply system and the toxicity of the materials handled in the hood. The AU specification should be tailored to suit the needs of the laboratory room location.

For projected new buildings it is frequently necessary to estimate the cost of air conditioning early, before the detailed design and equipment specifications are available. For that early estimating, the following guidelines may be used.

<u>Conditions</u>	<u>cfm/sq. ft. Open Hood Face</u>
Ceiling panels properly located with average panel face velocity <40 fpm (see Ref. 137). Horizontal-sliding sash hoods. No equipment in hood closer than 12 in. to face of hood. Hoods located away from doors and trafficways.	60
Same as above, some traffic past hoods.	80
Ceiling panels properly located with average panel face velocity <50 fpm (see Ref. 137). Hoods located away from doors and trafficways - or - Ceiling diffusers properly located, no diffuser immediately in front of hoods, quadrant facing hood blocked, terminal throw velocity <60 fpm. Hoods located away from doors or trafficways.	80
Same as above, some traffic past hoods.	100
Wall grilles. Possible but not recommended for advance planning of new facilities.	

C. Auxiliary Air Hoods

Auxiliary air hoods are of proprietary design and a quantitative analysis cannot be provided here. Some designs blow contaminants out of the hood into the room; others are quite effective. The referenced performance test can and has been used to demonstrate the control level achieved by any specific design. Well-designed auxiliary air hoods perform as well as any other hoods in this regard.

Some auxiliary air hoods, introducing untreated or partially treated air at low velocity, may degrade the room air conditioning if the auxiliary air is as much as 20°F warmer than the room air. This behavior may be observed with a smoke test, but is difficult to quantify and there is not a valid, demonstrated quantifying test.

If the laboratory room air is to be maintained at some specified condition of temperature, humidity (and perhaps cleanliness), use of auxiliary air hoods may not be economic or energy-conserving as compared to regular airfoil hoods with well-designed room air supply.

D. General Design Criteria

1. Provide uniform exhaust air distribution in hood. Adjust baffles and air flow for less than + 20% variation in face velocity with sash in maximum open position.

2. Locate hood away from heavy traffic aisles and doorways.
3. Use corrosion resisting materials suitable for expected use.
4. Locate exhaust fans outside of buildings.
5. Avoid sharp corners at jams and sill. Flanges and rounded hood inlets are desirable.
6. By-pass opening in hood is desirable to avoid excessive indraft under partially-closed sash condition. Opening to be baffled to prevent splash from eruption in hood.
7. Installation and maintenance. Inspect hood periodically; monthly for new or critical installations. Quarterly or semi-annually for others. Use calibrated velometer or heated wire anemometer.
8. Provide tempered or conditioned make-up air to laboratory. Make-up air volume to be selected for desired air balance with adjoining spaces.
9. In order to reduce exhaust volumes, local exhaust hoods should be considered instead of laboratory bench hoods for fixed set-ups.
10. For air conservation use horizontal sliding sash.

E. Perchloric Acid Hoods

Perchloric acid is extremely dangerous because it is a very strong oxidizer. When the acid reacts with organic material, an explosive reaction product may be formed.

1. Do not use perchloric acid in a hood designed for other purposes. Identify perchloric acid hoods with large warning signs.
2. Provide exhaust ventilation and room supply air in accordance with above.
3. Utilize local exhaust ventilation within the hood to minimize condensation of vapors inside the hood.
4. Locate all utility controls outside the hood.

5. Materials of construction for this type of hood and ductwork must be non-reactive, acid resistant and relatively impervious. AVOID ORGANIC MATERIALS unless known to be safe. Stainless steel type 316 with welded joints is preferred. Unplasticized polyvinyl chloride or an inorganic ceramic coating such as porcelain are acceptable.
6. Ease of cleanliness is paramount using all welded construction for stainless steel with accessible rounded corners.
7. The work surface should be water tight with a minimum of 1/2" dished front and sides and an integral trough at the rear to collect the washdown water.
8. Design washdown facilities into the hood and ductwork. Use daily or more often to thorough clean perchloric acid from the exhaust system surfaces.
9. Each perchloric acid hood should have an individual exhaust system. Slope horizontal runs to drain. Avoid sharp turns.
10. Construct the hood and ductwork to allow visual inspection.
11. Where required, use a high efficiency (greater than 80%) wet collector constructed for perchloric acid service. Locate as close to the hood as possible to minimize the accumulation of perchloric acid in the exhaust duct.
12. Use only an acid resistant metallic fan, a metallic fan protected by an inorganic coating or an air ejector.
13. Lubricate the fan with a fluorocarbon type grease.
14. Locate the fan outside of the building.
15. The exhaust discharge must terminate out of doors, preferably using a vertical discharge cap which extends well above the roof eddy zone.

IV. EXISTING HOOD DESIGN

- A. Where technically and economically feasible, existing hoods should comply with all criteria listed above.
- B. Existing hoods may alternately be evaluated according to the following criteria:
 1. Where high toxicity materials are used in the hood, the average face velocity should equal or exceed 150 fpm with sash full open. No single spot reading should be less than 125 fpm.

2. All other hoods should perform such that the average face velocity equals or exceeds 100 fpm with sash full open. No single spot reading should be less than 70 fpm.

Existing hoods that do not meet the criteria set for high toxicity hoods should be upgraded or restricted from high toxicity material handling. Any such hood thus restricted should be conspicuously labeled as to this fact with a durable label reading:

WARNING
DO NOT HANDLE HIGH TOXICITY
MATERIALS WITH THIS HOOD!

Existing hoods that do not meet the criteria for general use should be upgraded or shall be conspicuously labeled to show the maximum sash height below which 100 fpm velocities are attained. The following or similar wording should be used.

DO NOT OPERATE WITH HOOD SASH
RAISED ABOVE THIS LINE.



V. MAINTENANCE PROCEDURES

- A. After initial laboratory hood performance tests have been completed, those which fail to meet the above criteria should be restricted in use or upgraded. Magnehelic gauges on all hoods should be adjusted to reflect the operating condition of each hood after a rating has been assigned. A performance test should be made by facility personnel at least yearly thereafter or whenever the Magnehelic gauge or included manometer indicates a deterioration of hood function. Defective gauges should be repaired or replaced as necessary. Test results should be documented and filed in a binder with these written procedures. The test should consist of a traverse of at least six, and preferably nine, face velocity readings in the plane of the face opening with the sash wide open (and the bottom doors closed in a walk-in hood) using a calibrated velometer or heated wire anemometer.
- B. Preventive maintenance of motor, fan and other working parts should be scheduled twice per year or more often as the tests indicate. The interior of the hood should be thoroughly cleaned at this time. The cleaning operations for a standard stainless steel-lined hood used for exhausting common laboratory chemical vapors should include the removal of the rear air distribution baffles (if present) and thorough scrubbing of the baffles and all interior surfaces of the hood with an industrial strength cleaning compound. The employee performing this cleaning should wear a face shield (an organic vapor acid gas chemical cartridge respirator) and long neoprene gloves to protect exposed skin from chemical corrosion or splash and should ensure that the hood fan is operating during the cleaning process to remove any contaminant vapor (include special precaution if hood has had any history of use with perchloric acid).

- C. The air distribution baffles should be reinstalled after cleaning and adjusted to provide uniform air flow across the hood face. Hoods should be maintained free from excessive clutter and large equipment which will interfere with normal air flow across the bench working surface.
- D. Complete maintenance records of each hood should be kept in a folder with this procedure. Records should show all initial performance test data (hood face velocity, Magnehelic gauge readings, and status of hood capabilities), each subsequent test, date and results, and dates preventive maintenance has been performed. A complete retest should be made immediately after preventive maintenance operations are performed and magnehelic gauges should be reset if necessary. Results should be documented as above.

IV. REFERENCES

- A. American Conference of Governmental Industrial Hygienists: Threshold Limit Values for Chemical Substances and Physical Agents in the Workroom Environment with Intended Changes for 1985. ACGIH, P.O. Box 1937, Cincinnati, Ohio.
- B. American Conference of Governmental Industrial Hygienists: Industrial Ventilation--A Manual of Recommended Practice (18th Edition). ACGIH Committee on Industrial Ventilation, P.O. Box 16153, Lansing, Michigan (1984).
- C. PPG Chemicals, General Policy and Procedures No. 7.027, "Internal Permissible Exposure Limits (IPELs)."
- D. Caplan, K. J. and T. W. Knutson, "Laboratory Fume Hood - A Performance Test," ASHRAE Transactions, Vol. 84, Part 1, 1978.

FUME HOOD CHECK SHEET

Check one: ☐ Initial Check ☐ Annual Check ☐ After Maint. Recheck

Room Number: _____ Date: _____

Hood Number: _____ Initials: _____

Hood Type: _____

For laboratories meeting Chemicals' design criteria dated: _____, list
design average _____ and face velocity of hood _____.

Instrument Used: _____

Date Last Calibrated: _____

Face Velocity Readings (fpm) -- lab doors and windows SHUT, sash full open:

_____	_____	_____
•	•	•
-----	-----	-----
_____	_____	_____
•	•	•
-----	-----	-----
_____	_____	_____
•	•	•

Average Face Velocity: _____

If < design face velocity (for hoods meeting Chemicals' design standards),
or if <150 fpm (for existing hoods), check one:

☐ Hood Cannot be Upgraded
(Apply Warning Label)

☐ Hood Able to be Upgraded
(Recommend Maint. Perform Recheck)

If < 100 fpm, check one:

☐ Hood Cannot be Upgraded
(Apply Warning Label)

☐ Hood Able to be Upgraded
(Recommend Maint. Perform Recheck)

Magnehelic Gauge Set: _____ (Reading)

Preventive Maintenance Performed: _____
Date Initials

Annual Cleaning: _____
Date Initials

8.2 -- RECORDS OF LAB HOOD INSPECTIONS AND CLEANING

9.0 Vinyl Chloride

9.1 -- CHEMICALS' AUDIT CHECKLIST

VINYL CHLORIDE MONOMER COMPLIANCE ASSESSMENT

Answer/Reference
to Working Paper
or Document

A. Employee Monitoring

1. Has initial determination monitoring been completed in VCM II? _____
2. Is monitoring conducted according to the OSHA schedule:
 - a) $X > \text{PEL}$, monthly _____
 - b) $\text{PEL} \geq X > \text{AL}$, quarterly _____
 - c) Discontinue when two consecutive determinations made greater than five working days apart are below the AL _____
 - d) Whenever a change is made that may result in an exposure increase _____
3. Does the monitoring method have the prescribed accuracy? (NIOSH P & CAM 178 or equivalent) _____

B. Regulated Areas

1. Are areas designated as regulated where VCM is manufactured, reacted, repackaged, stored, handled, or used; and VCM concentrations are greater than the PEL? _____
2. Is access to this regulated area limited to authorized persons? _____

C. Methods of Compliance

1. For work areas that exceed the PEL, is there a written plan to reduce exposures below the PEL by engineering and work practice controls? _____
2. Is this plan updated every six months? _____

Answer/Reference
to Working Paper
or Document

D. Respiratory Protection

1. Is respirator selection made from those specified by OSHA for specific concentrations? _____
2. Are the following provisions of 1910.134 fulfilled:
 - a) Are negative pressure respirators fit-tested? _____
 - b) Is the proper air quality and flow rate supplied? _____

E. Hazardous Operations/Emergency Situations

1. Is there a written operational plan for emergency situations? _____
2. Does this plan specify:
 - a) protective clothing and respirators? _____
 - b) evacuation of employees not suitably protected? _____

F. Training

1. Is each employee engaged in VCM operations provided training in its hazards and precautions for its safe use? _____
2. Is the content of the VCM standard communicated to the employees at the time of indoctrination annually? _____
3. Does the training program include:
 - a) health hazards, especially the carcinogenic hazard? _____
 - b) operations that could result in exposures above the PEL? _____

Answer/Reference
to Working Paper
or Document

- c) Does the respirator training include:
- how to wear, adjust, and determine proper fit? _____
 - the purpose, use, and limitations of each respirator? _____
 - training for the trainers? _____
- d) the fire hazard, acute toxicity, and protective steps? _____
- e) the purpose for and description of the air monitoring program? _____
- f) the purpose for and description of the medical surveillance program? _____
- g) emergency procedures? _____
- h) information to aid employees in recognition of conditions which may result in the release of VCM? _____
4. Are records of the training maintained and include the date, employees present, and subjects covered? _____

G. Signs and Labels

1. Are entrances to regulated areas posted with signs that say, "Cancer-Suspect Agent Area - Authorized Personnel Only"? _____
2. Do areas that have hazardous operations have signs posted that say, "Cancer-Suspect Agent in this Area - Protective Equipment Required - Authorized Personnel Only"? _____
3. Are containers of waste contaminated by VCM labeled "Contaminated with Vinyl Chloride Cancer Suspect Agent"? _____

Answer/Reference
to Working Paper
or Document

4. Are containers of VCM labeled "Vinyl Chloride - Extremely Flammable Gas Under Pressure - Cancer Suspect Agent"?
-

H. Reports

1. Within one month of establishing a regulated area, has the number of employees in each regulated area during normal operations, including maintenance, been reported to the OSHA area director?

2. Have emergencies been reported within 24 hours to the OSHA area director and followed by written communication describing the nature and extent of employee exposures and measures taken to prevent future emergencies as requested?

3. Have employees that have had monitoring results greater than the PEL been informed in writing within ten days of the results and the steps being taken to reduce air concentrations?

O.D. Miscellaneous

10.1 -- CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

REVISED 5/3/85

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CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

Page 1
4/01/85

I. INTRODUCTION

OVERVIEW

PPG Chemicals' Industrial Hygiene Records System (IHRS) currently has two modules. The first of these is the Chemical Inventory and MSDS module which assists in the maintenance of up-to-date chemical inventory information, and particularly, in the tracking of current MSDSs for all hazardous chemicals present in the Chemicals Group. The second module is the Area/Personnel (A/P) Monitoring module which is used to generate industrial hygiene monitoring summary reports. Reports are constructed according to the parameters specified by the user as they are requested.

The IHRS is a user friendly system which operates on the Corporate Computer System in the TSO mode. Both modules are menu driven--the computer asks the questions, the user fills in the blanks.

LOGON PROCEDURES - TSO

The following procedures are used to logon to TSO and from there the IHRS at the Corporate computer. The user must have a user ID (CHMxxxx), an account number (Cxxxxx), and a password (YOURPASS). These will be requested at various stages during the logon and report request procedures. The user is also requested to supply his name (YOURLASTNAME) and plant ID (xxx). The user's name, as supplied, must not contain any blank characters. The plant ID is the three-digit plant code used by the A/P system. Lake Charles' is "254," Natrium is "233," Barberton is "230" and so on. In this system, G.O. is "001."

To logon from a Four-Phase Terminal, the following procedure is used.

1. Release your terminal into the ForeWord screen mode. The word "ForeWord" should appear on the screen.
2. Hold down the CTRL key and press the Cursor Return key. The following screen should appear:

```
TYPE F,V, S OR ?  
MFE/IV IS READY
```

3. Type in V. This transfers your screen into the Vision mode. The following screen should appear.

```
VISION IS READY. ENTER YOUR ID  
001.G, P1, ,      ???0
```

(The cursor should be blinking at the bottom on the first "?")

4. Type in your initials. Example: XYZ

The following screen should appear.

```
TYPE E,F,J,L,M,S,T,V,X,3,?  
001.G, P1, , XYZ0
```

5. Press the "3" key.

The message "ENTER APPLICATION NAME" should appear near the top of the screen.

6. Type in "TS0." Then press the "+/=" key.

Note: While on TSO in Four-Phase, the "+/=" key is the Enter key.

7. From this point on, supply the information as requested: CHEMID, PASSWORD, and ACCOUNT NUMBER (only if you have more than one).

Logon is complete when a "READY" message is displayed after the system messages have appeared.

LOGON PROCEDURES - IHRS

To logon to the IHRS, simply enter the command "IHCMD5" when the READY message has appeared (See SCID: IH001). The computer will respond with the message "*** OK TO USE IH SYSTEM COMMANDS." Then type in "AP" to use the A/P Reporting module or "MSDS" to use the MSDS/Chemical Inventory module. The computer will prompt the user for a user ID, user name, and account number. The MSDS module also requests that the plant ID be entered (See SCID: IH002 and IH017). A short cut to this procedure is shown in SCID: IH003 and IH017. You must logon to the IHRS only once each time you logon to TSO. After the above message has been received, you may move freely about between the A/P and MSDS module at any time during the TSO session.

II. CHEMICAL INVENTORY/MSDS MODULE

OVERVIEW

The Chemical Inventory and MSDS module was designed to serve as a repository of plant materials inventory and MSDS information. Information such as the manufacturer(s) or supplier(s) (up to three per substance), the MSDS number and date of issue from each manufacturer, the location, quantity, frequency and description of use for each department, the ingredients and percent of composition (if a mixture), and any common synonyms are entered into the computer by the plant. The system is driven by either the Chemical Abstracts Registry (CAS) number for a pure substance or by a user generated "trade number" for mixtures and proprietary substances.

The system generates indexes for the plant master MSDS file and for the various department's MSDS files listing both the MSDS number and the CHIS code. It generates listings of those substances with and without an approved MSDS. It keeps track of the date of issue of all MSDSs on hand and generates basic inventory reports.

The system maintains a plant master file and a department master file for each plant and stows changed or deactivated records into history files. The system also maintains group-wide chemical, trade, and synonym tables. Department and job class tables are accessed from the A/P system tables by the computer. Environmental Affairs assigns CHIS codes for each substance and enters them into the chemical table.

Important: Each plant should identify a single user ID and a single account number to be used for data entry and report requests. Chemical inventory and MSDS information which is entered via data input sheets (Figures 1 and 2) should be written to a file identified by the name "USERID.ACCT#.F4xxx.DATA" where xxx is the plant number. Each new batch of information should be merged into this file without obliterating any existing information. Whenever a report request is made, the computer updates the main file, empties the F4xxx file, and prepares the reports requested. This update only occurs when the same user ID and account number is used to request the reports. Otherwise, requested reports will not reflect the new information and the F4xxx file will not be emptied.

CHEMICAL INVENTORY/MSDS DATA COLLECTION

On a department-by-department basis, the following information must be collected for each substance used or produced (See Hazard Communication Compliance Program for scope).

- Chemical or trade name.
- Status (purchased, manufactured, intermediate, waste or other).
- Name(s) of manufacturer(s) or supplier(s).

- Quantity/frequency of use (tons, pounds, gallons or cubic feet per day, week, month, or year; Continuous is used for substances which are stagnant in system, i.e., not consumed in process.).
- Brief description of use.

The best sources of this information are plant Purchasing/Supply and the superintendents of each department.

COMPILATION OF THE PLANT MSDS FILE AND INVENTORY DATA ENTRY

The next step is to create a comprehensive plant MSDS file. Addressing one "work area" at a time, relevant chemical inventory information for each material is recorded on a Chemical Inventory and MSDS File (CIMF) Master Input Form (Figure 1). Its CAS number is first recorded along with its most common chemical name and any common synonyms. If no CAS number exists, as for trade name substances, a trade number is assigned (see Conventions below).

Existing MSDSs are then assigned a number, evaluated for completeness, and physically added to the new "master" MSDS file binder. Pertinent MSDS information for each material is recorded on the Master Input Form. This information includes the names of the manufacturer(s) or supplier(s) of each material, whether a MSDS had been obtained from each manufacturer/supplier, the number assigned to it, and its date of issue. When supplied by the manufacturer, the components of trade name materials and their percent of composition are also recorded.

Finally, inventory/use information is recorded, including the location (department), quantity, frequency, and brief description of use. If the substance is being used in another department and the MSDS information is already on record, then it is only necessary to fill out the "key" at the top of the form and the "department" (FDF) section of the form.

When completed, the Master Input Forms are sent to Key punching or Data Entry where the information is transferred into the computer file (see note in "Overview" section). Feedback reports should be reviewed carefully for accuracy. Corrections can be made to erroneous entries using SAS full screen edit (see File Updates and Maintenance).

DATA ENTRY CONVENTIONS

Figure 1 (Form 5522) shows the CIMF Master Input Form. When entering MSDS/inventory information, use only the lines for which new data must be entered. Although the system tolerates redundancy, it is better not to repeat information which is already on file for your plant. Repetition increases the likelihood of erroneous data being recorded. The following conventions should be used in the generation of the plant inventory/MSDS file.

- General

All information is entered beginning with the first block in any field.

PPG CHEMICAL INVENTORY AND MSDS FILE - MASTER INPUT FORM

PLANT # CAS # OR TRADE #

CHEMICAL NAME A/P CODE

STATUS KEY

MANUFACTURER/SUPPLIER # 1 APPROVED MSDS? MSDS # DATE OF ISSUE

MANUFACTURER/SUPPLIER # 2 APPROVED MSDS? MSDS # DATE OF ISSUE

MANUFACTURER/SUPPLIER # 3 APPROVED MSDS? MSDS # DATE OF ISSUE

DEPARTMENT QUANTITY/FREQ. OF USE UNITS FREQ. OF USE DESCRIPTION OF USE

CAS # - INGREDIENT 1 % COMP. CAS # - INGREDIENT 2 % COMP.

CAS # - INGREDIENT 3 % COMP. CAS # - INGREDIENT 4 % COMP.

CAS # - INGREDIENT 5 % COMP.

SYNONYM

SYNONYM

STATUS: P - Purchased I - Intermediate T - Transferred Between Depts. X - Imported
M - Manufactured W - Waste (Produced/Used On - Site) O - Other

UNITS: L = Pounds, T = Tons, G = Gallons, C = Cubic Feet

FREQUENCY OF USE: 1 = Continuous, 2 = Daily, 3 = Weekly, 4 = Monthly, 5 = Yearly

Signed

Date

- CAS Number

Enter entire number, including dashes. Numbers can occupy from seven to ten positions. The following sources should be used to obtain CAS numbers: 1) First consult a CIMF chemical table listing (system Report 11) to determine whether the substance is already on file from another plant. If it is not, consult the TSCA chemical substance inventory or the NIOSH Registry of Toxic Effects of Chemical Substances (RTECS). All pure substances should have an assigned CAS number. If one cannot be found, call Environmental Affairs for assistance.

- Trade Number

Trade name substances and mixtures do not have CAS numbers and will require trade numbers to be assigned. The first four characters in all assigned trade numbers for each plant should be "Txy-" where "xy" are the last two digits of the plant number, e.g., Barberton's trade numbers all start with "T31-." Lake Charles' should all start with "T54-," Natrium's with "T33-," and so on. This will prevent the repetition of a single trade number by more than one plant. This is important since the chemical, trade, and synonym tables are common to all plants. The last one to six characters are assigned arbitrarily and may be either alphabetic or numeric.

- Chemical Name

Enter the most commonly used chemical name for a material. In most cases, this will be the name as it appears on the MSDS. Abbreviate only when necessary to limit the name to 25 characters. The "A/P code" field should be left blank.

- Status

Self-explanatory. The "transferred" status should be indicated for substances which are both manufactured and at least partially consumed on site by another process.

- Manufacturer/Supplier #1-3

Always drop "Company," "Corporation," "Incorporated," and all abbreviations of these from the company name. BE CONSISTENT! Enter the company name exactly as it's listed on the MSDS. If the name is longer than the 18 characters allocated, then truncate rather than abbreviate. Do not enter "ACME Chemical" one time and "ACME Chemicals" the next time. These will show up as different company names in Reports 3 and 4.

If there is an "approved" MSDS on file for an inactive manufacturer/supplier, it may be entered into the file for possible future use. If there is no MSDS on file for the current manufacturer/supplier(s), enter the manufacturer/supplier's name and circle "N" under "Approved MSDS." If you desire to list a "store bought" MSDS such as one from General Electric's

marketed file, the following rules should be followed: 1) DO NOT do it unless there is no other good MSDS available for the substance. 2) When listing an information sheet such as the G.E. Data Sheet, the manufacturer/supplier should be identified as: 9 GE DATA SHEET. The "9" in front of the field will cause these "information sheets" to be listed last on Reports 3 and 4. "PPG" should be identified as the manufacturer/supplier for all manufactured substances, by-products, intermediates, and the like.

When substances are purchased from a supplier rather than the manufacturer, the manufacturer identified on the MSDS/label should be listed. The supplier name may also be listed (if desired) but with the same MSDS number as that listed for the manufacturer. An "S" should be entered in the last space in the manufacturer/supplier field to identify that the listing is for a supplier.

- Approved MSDS

Until objective criteria are established for making this judgment, all MSDSs will be "approved." If an appropriate CHIS code cannot be subsequently assigned based on the information contained on a MSDS, the CIMF coordinator or plant coordinator will retrospectively change the approval status to "not approved."

- MSDS Number

When generating the plant MSDS file, start at 1 and assign numbers in ascending order. This is an arbitrary numbering system and no attempt needs to be made to keep the file in alphabetical order. The computer will keep track of numbers and departments, and index listings will be generated based on assigned numbers. Do not use any number twice. Twice-used numbers can be identified in the "MSDS numbers listings" provided in Reports 1 and 2. These should be eliminated when they occur.

- Date of Issue

Use MMDDYY format. If only a month and year are listed on the MSDS, then assign "01" as the day. As such, May 1981 becomes "050181." When no date of issue is listed, leave this field blank.

- Department

A/P department code. Records with invalid codes will be rejected.

- Quantity/Frequency of Use

Specify consumption and production rate during full or "normal" production. If production occurs intermittently, specify frequency in "description of use" field. Items which are not consumed (refrigerants, catalysts, etc.) should be listed as "continuous" with amount in system identified in "quantity field." Attempt to be as clear about this as possible.

- CAS Number, Ingredient 1-5 and Percentage Comp.

If the components of a mixture or trade name material are listed by the manufacturer or the MSDS, then this information should be entered into the system. "Percent of composition should be in whole percentage points. If a range of concentrations is provided, specify the largest percent listed for hazardous ingredients only. If only a generic name is provided, i.e., polyalkylene glycol, then assign a "generic name number" using the same conventions used to assign a trade number (e.g., G31-1). This new "generic name number" must also be added to the chemical table on a separate data entry sheet.

- Synonym

Same conventions as "chemical name" field.

- Miscellaneous

Individual components of a waste stream may be entered as "waste" using the appropriate CAS numbers or the entire waste stream may be entered as a "trade name product" and the individual components listed as ingredients to the waste stream. In either event, all constituents which make up greater than one percent of any stream or product must be listed (0.1 percent for carcinogens).

Materials such as "20 percent caustic" and "50 percent caustic" should be entered as trade name compounds with ingredients listed below.

FILE UPDATES AND MAINTENANCE

In order for the system to remain useful on a continuing basis, appropriate and timely updates will need to be made.

- Information Updating

Two independent measures have been identified for tracking plant inventory/MSDS information on an ongoing basis. Both measures require a concerted effort on the part of key individuals and, as a result, this accountability must be clearly defined and given a high priority at each plant. The integrity of the file will depend on it.

The first measure involves plant Purchasing/Supply. Plant Purchasing must determine: 1) whether a MSDS is on file before a purchase order is sent to the supplier/distributor of a hazardous substance; and 2) whether the work area ordering the substance is identified as a current user in the inventory. This information is supplied on Report 3. If not, a request for information must be attached to the order.

The person responsible for maintaining the plant file must be informed whenever the chemical purchase represents a change to the chemical inventory. Copies of purchase orders will be sufficient notification. All new and revised MSDSs must also be forwarded to this person when received by Purchasing.

In addition to this important task, plant Purchasing must also send out a blanket request for MSDS information not currently on the file on a periodic basis. Report 4 provides a list of chemicals by, manufacturer, for which this information is needed.

The second measure involves a periodic review of inventory information with the work area superintendent. Report 5 is a concise summary by department which was designed for this purpose.

- Computer File Updating

New information can be added to the computer file in several ways. Information concerning new substances, additional manufacturers/suppliers for an existing substance, and new department of use information for an existing substance may all be entered on the Master Input Form as above. Updates of existing manufacturers/suppliers information should be made using Form 5524 "MSDS Information Updates" (Figure 2). These updates can also be made on-line via the SAS full screen editor (FSEDIT). All corrections to erroneous entries will need to be made online either by deleting the existing record (and re-entering via the Master Input Form) or simply changing the erroneous information. A basic knowledge of the SAS FSEDIT commands will be necessary to do online edits. The SAS/FSP User's Guide (available from the SAS Institute, Inc.; Box 8000; Cary, North Carolina; 27511-8000) should be consulted. A brief description of some of the basic commands is also provided in the next section.

- SAS FSEDIT

Individual plant master file (MSDS, supplier information) and department master file (department/use information) records can be edited via SAS FSEDIT. Simply request Option 2 (MSDS/Plant MFEDIT) or Option 3 (DEPT INV/USE EDIT) from the MSDS system menu (see SCID: IH004). If you choose Option 2, you will be given the opportunity to supply the new "dates of issue" in the event that any are to be changed during the SAS FSEDIT session (see SCID: IH005). Since SAS stores all dates using a 4-5 digit reference number, you will need to enter the issue dates here to obtain the correct "SAS Date" for the intended update (see SCID: IH006). If no dates of issue are to be changed, simply specify "none" when prompted for dates. When choosing Option 2 or 3, the user will be brought to the main SAS FSEDIT menu (see SCID: IH007). In most instances, the user will want to choose Option 1 "Edit SAS Data Set: Work.MSDS" or "Edit SAS Data Set: Work.DEPT." Once Option 1 is specified, the first record will be brought to the screen (see SCID: IH008).

PPG CHEMICAL INVENTORY AND MSDS FILE - MSDS INFORMATION UPDATES

(EXISTING MFR'S ONLY - NEW DATE OF ISSUE/APPROVAL STATUS)

SL 071676

TYPE F C P			PLANT			0 0 1			PASSWORD			CAS # OR CHEMICAL NAME																									
1	2	3	4	5	6	7	8	9	10	11	12	13	37																								

MANUFACTURER/SUPPLIER																									APPROVED MSDS?		MSDS #				DATE OF ISSUE					
																									Y N											
38																								55	56	57	58	59	60	61	62	63	64	65	66	67

TYPE F C P			PLANT			0 0 1			PASSWORD			CAS # OR CHEMICAL NAME																									
1	2	3	4	5	6	7	8	9	10	11	12	13	37																								

MANUFACTURER/SUPPLIER																									APPROVED MSDS?		MSDS #				DATE OF ISSUE					
																									Y N											
38																								55	56	57	58	59	60	61	62	63	64	65	66	67

TYPE F C P			PLANT			0 0 1			PASSWORD			CAS # OR CHEMICAL NAME																									
1	2	3	4	5	6	7	8	9	10	11	12	13	37																								

MANUFACTURER/SUPPLIER																									APPROVED MSDS?		MSDS #				DATE OF ISSUE					
																									Y N											
38																								55	56	57	58	59	60	61	62	63	64	65	66	67

TYPE F C P			PLANT			0 0 1			PASSWORD			CAS # OR CHEMICAL NAME																									
1	2	3	4	5	6	7	8	9	10	11	12	13	37																								

MANUFACTURER/SUPPLIER																									APPROVED MSDS?		MSDS #				DATE OF ISSUE					
																									Y N											
38																								55	56	57	58	59	60	61	62	63	64	65	66	67

TYPE F C P			PLANT			0 0 1			PASSWORD			CAS # OR CHEMICAL NAME																									
1	2	3	4	5	6	7	8	9	10	11	12	13	37																								

MANUFACTURER/SUPPLIER																									APPROVED MSDS?		MSDS #				DATE OF ISSUE					
																									Y N											
38																								55	56	57	58	59	60	61	62	63	64	65	66	67

To find the record to be edited, the following find statement should be entered from the command line. "F VARIABLENAME = XY...Z". Variable names are listed in parentheses on the screen at each field name. For example, the variable name for plant number is "PCODE" and for CAS Number is "CASNO." Therefore, to find the record for acetic anhydride (CAS No. = 104-24-7), the command F CASNO = 104-24-7 would be entered on the command line (see SCID: IH009). If such a record exists, it will be brought to the screen (IH0010).

To edit (add or change) information present on a record, simply move the cursor to the appropriate field and type over the existing information (if any) and enter the updated screen by processing the "+/-" or Enter key. If important information is accidentally erased or obliterated in the process, move the cursor back to the command line and type "CANCEL." The original screen will be recovered. This cannot be done once the screen has moved to a different record. To delete a record, type in "DELETE" on command line. To bring the next desired record to the screen, repeat the above "find" process. If you are searching for a record that has already been passed by the pointer (e.g. CAS number lower than the present CAS number on screen). An end of file message will be displayed. Simply press PF5 (repeat find) and the search will be repeated from the top of the file. Whenever a record is changed from "active" to "inactive," it is moved to the "history file." When a record is deleted, it is gone forever.

When edits are completed, hit PF3 twice to return to main menu.

- SAS FSEDIT Commands (typed on the command line)

nnnn - Type the number of the observation you want to display on the screen.

CURSOR - The cursor command automatically positions the cursor at a given screen location each time an observation is displayed. Type "CUR" on the command line, move the cursor to the desired location, and press ENTER.

DELETE - The delete command sets all values of the displayed observation to missing values.

CANCEL - The cancel command cancels all changes made to the current screen and restores all variables to the original values.

STRING (VARIABLE LIST) - Character variables to be searched for embedded text strings are named in the string command. For example:

STR MFR1 MFR2 MFR3

S Character Strings - The S command searches for all the character strings listed in values of the variables specified in the STR command. For example, S DUPONT

Observations containing the string "DUPONT" would be found.

F (list of criteria) - The F command locates observations meeting one or more criteria. Each criterion is specified as:

variable name comparison operator value

where variable name is a SAS variable name, comparison operator is one of the following comparison operators, =, <=, >, >=, <, <=, EQ, NE, GT, GE, LT, and value is a valid value for the variable. For example:

F CASNO=108-24-5

- PF Keys in EDIT Mode

The PF keys used in EDIT mode are shown below:

PF1 --	HELP	PF7 --	BACKWARD
PF2 --	RETURN	PF8 --	FORWARD
PF3 --	END	PF9 --	ADD
PF4 --		PF10 --	LEFT
PF5 --	REPEAT	PF11 --	RIGHT
PF6 --	DUP	PF12 --	CURSOR

The function of each PF key in EDIT mode is described below:

HELP	displays information about a variable. For help, place the cursor anywhere in the field for the variable and press the HELP PF key.
RETURN	returns to SAS.
END	returns to the primary menu screen.
REPEAT	repeats your latest L, S, or F command. (See Commands in EDIT Mode) The procedure continues to search through the data set until it finds another observation meeting the search conditions.
DUP	adds a duplicate of the observation currently displayed. This function is useful for entering data when several observations have similar values.
BACKWARD	displays the previous observation.
FORWARD	displays the next observation.
ADD	displays a blank screen ready for entering a new observation.
LEFT	shifts left one screen (when more than one screen is needed to hold all the fields for an observation).
RIGHT	shifts right one screen (when more than one screen is needed to hold all the fields for an observation).
CURSOR	moves the cursor to the command line.

The procedure treats an undefined PF key as an ENTER key. You can review or change the EDIT mode PF key definitions by selecting Option 2 from the Primary Option Menu.

MSDS SYSTEM REPORTING

• Description

The following reports can be generated by the computer upon request:

- (1) PMI Plant MSDS Index
- (2) DIL Department MSDS Index/Listing
- (3) PAM Chemicals With Approved MSDSs
- (4) WOM Chemicals Without Approved MSDSs
- (5) UPL Inventory Update Listing
- (6) ODM Chemicals With Out-of-Date MSDSs
- (7) IOP Inventory of Plant -- Summary
- (8) IPC Detailed Plant Inventory
- (9) CPP Chemical Presence in Plant
- (10) *** No Report 10 -- Reserved
- (11) CST Print Chemical, Synonym Trade Tables
- (12) PDJ Print Plant, Department, Job Tables

Report 1 provides an index for the plant's master MSDS hazard code file. The index lists the MSDS number and the established Chemicals' Hazard Index System (CHIS) code for all materials present in the plant by chemical name, trade name, and all listed synonyms.

Report 2 provides an individual MSDS and CHIS code index for each plant department/production unit. Each individual department index is followed by an ascending list of numbers for MSDSs which should be present in the department MSDS file. This is used in the initial compilation of the department MSDS file from the plant master file and also to periodically check the integrity of department files.

Report 3 provides a list of chemical substances which have one or more "approved" MSDSs. The MSDS number, the date of issue, and the name of the manufacturer/supplier is listed for each approved MSDS. A list of plant departments in which each chemical is encountered is also provided.

Report 4 is a list, by manufacturer, of all chemical substances at the plant for which an "approved" MSDS does not exist in the MSDS file.

Report 5 is a brief summary of the material inventory for individual departments. It includes the names of all materials used or produced, the quantity of use or production, a brief description of the use of each material, and a list of the primary and alternate suppliers.

Reports 11 and 12 are printouts of the chemical, synonym and trade tables, and of the department and job class tables, respectively.

Reports 6 through 9 were designed to provide information which will be useful for other industrial hygiene-related programs. Report 6 provides a list of MSDSs which are older than any date specified. MSDSs with no date of issue are also listed in this report. Report 7 is a summary of the chemical inventory for the entire plant. Report 8 is a more detailed plant inventory listing and Report 9 will identify all locations within the Group where a chemical is encountered either as a pure substance or as an ingredient of a trade name substance.

- Report Generation

Reports are requested online by specifying Option 1 from the main MSDS menu (see SCID: IH004). The user is brought to a report menu (see SCID: IH012) from which the desired reports are requested. When all desired reports have been specified, the user selects "R" and is returned to the main menu. "S" is then selected to submit the report request. At this point, the user is given the option to submit the report as is, to edit the JCL, or to cancel the report request (see SCID: IH013). Reasons for editing the JCL might include: 1) change number of copies (see line 20 on SCID: IH014); and 2) change printer location (see line 4). When changes have been made, hit PF3 to return the system back to SCID: IH013, then enter a blank to submit job (see "JCL EDITS" in the A/P system section for details).

MISCELLANEOUS

You may browse the MSDS file of any other plant by choosing Option 4 from the main menu. You will be asked for a plant number (SCID: IH016) and then the system will drop you into the plant master file of the specified plant via SAS FSBROWSE. You will be able to browse through the file but will not be allowed to change any records.

By choosing Option 5, you may also enter the CAS number of any substance to see whether any other plant has a MSDS on file for that substance. If one exists, you will be dropped into a file which contains all plant master file records for that CAS number specified.

III. AREA PERSONNEL (A/P) MODULE

OVERVIEW

The A/P module was designed to allow the user to generate various A/P monitoring reports both at the plant and division level. The user is queried by the computer to supply various report parameters on-line. The computer accesses some 60,000 A/P monitoring records using first Easytrieve to select the records of interest, and then SAS to generate the desired report.

A/P SYSTEM REPORTING

- Description of Reports

There are currently five reports which are available in the A/P module. A description and summary of each is provided below.

- 1) Summary Report For One Chemical

This report details the complete sampling history for any one substance. Individual sampling records are first listed (sorted by plant, department, job class and date); then a summary is provided which delineates the average and range of all exposure results for each job class. Sample coverage is detailed including the number of samples taken, the number of employees in the job class and the number of different employees sampled. If desired, the computer will also print out sample comments so that "problem" samples can be put in their proper perspective. Report parameters which can be specified by the user include:

- one or all plants
- chemical name
- one or all plant departments
- one or all job classes
- request sample comments (yes or no)
- specify exact date range or all results on record

- 2) Noise Exposure Report

This report details the complete sampling history for noise. It is fashioned after the summary report for one chemical except that averages are computed based on dose rather than sound pressure levels. This report provides the "noise exposure assessments" which are required to be reviewed by the physician in charge of the plant audiometric program and required to be kept as part of the audiometric records. The report reads all noise exposure records on file for which results are reported in dBA (as opposed to the percentage of allowable noise dose) for any one or for all plants.

3) Sampling Summary Report

This report provides a single page summary of monitoring activities either for a plant or for each department in a plant. This report lists the number of overstandards, the number of overexposures, and the total number of results, both STEL and TWA, for each substance/physical agent which has been monitored during the period of time specified. When no overstandard results have been obtained for a given substance/agent, only the number of samples taken are listed. The report can also calculate "mixture" exposures if specified. Mixture results are calculated only for sample numbers which had no overstandard result for any individual analysis. Sample comments are automatically printed out for all overstandard results encountered.

Report parameters which can be specified by the user include:

- one month, two or more months or one year
- one plant or all
- summary of entire plant or individual summaries for each department
- mixture calculations (yes or no)
- investigative samples included (yes or no)

4) Sampling Schedule Report

This report gives the average exposure, the total range of sampling results, and the current PPG IPEL for each chemical substance/physical agent by job class. The number of employees in the job class, the number of samples taken, and the employee coverage are also indicated. This report can be used in reviewing annual monitoring results with the formulation of a new annual monitoring schedule in mind.

Report parameters which can be specified by the user include:

- one or all plants
- date range

5) K-Test Statistics Report

This report calculates K-test statistics for a set of monitoring results for each job class and chemical substance/physical agent encountered. The statistical test published by R. M. Tuggle is utilized. The report lists two exposure levels including:

- 1) 95% results < exposure level
- 2) 5% results $\geq$ exposure level

The exposure levels listed in 1) correspond to "K" in Tuggle's method tested with 95% confidence where $P = 0.95$. An exposure level which is less than the IPEL in category 1 would indicate an "acceptable" exposure situation per the Tuggle statistic ($P = 0.95$). Category 2 represents a "K" test statistic with 95% confidence and $P = 0.95$. An

exposure level greater than the IPEL in this category would indicate an "unacceptable" exposure situation. A combination of > IPEL in Category 1 and < IPEL in Category 2 represents a situation where more sampling is required.

Report parameters which can be specified by the user include:

- one plant or all
- one chemical or all
- one department or all
- one job class or all
- one date range or all results on record

6) K-Test with Mixtures Report

This report is identical to No. 5 with the exception that samples which were analyzed for more than one chemical constituent are analyzed as one sample. The "result" reported for each sample is the "mixture exposure level" as defined and calculated in Appendix C of the ACGIH TLV Booklet, except that it is reported in whole percentage points rather than as a fraction of unity. The IPEL reported for these mixtures is 100%.

7) Leidel-Busch Statistics Report

This report is similar to the K-test report except that the statistical analysis performed yields an estimation of the "percent overstandards" for each job class/substance exposure potential. Statistics have been derived from the Occupational Exposure Sampling Strategy Manual published by NIOSH (DHEW Publication No. 77-173), authored by Nelson A. Leidel, Kenneth A. Busch and Jeremiah R. Lynch. Report parameters which can be specified by the user are identical to the K-test.

Note: Both the K-test and the Leidel-Busch test depend upon random sampling of employee exposures for accurate results. For this reason, investigative results have been screened out by the report. However, the user should be well aware of the tremendous potential for biased results in past data. Before any significant decisions are made based upon the results of the above statistical tests, a thorough investigation into the circumstances which surrounded the individual samples should be made.

8) Print IPEL Table

This report lists the current PPG IPELs. The source of each IPEL is indicated (OSHA, TLV or PPG-generated) and skin and ceiling notations are also indicated.

REPORT GENERATION

In order to request any of the above reports, the user accesses the A/P module from the Ready mode by entering "IHCMD5." After the message "*** OK TO USE IH SYSTEM COMMAND" appears, the user enters "AP" followed by the information requested by the computer (see SCID: IH017). The user is then brought to the main A/P system menu which lists the available reports (see SCID: IH018). The desired report is chosen from the menu and the user is queried concerning the parameters described above for each report. The queries are straightforward explaining how the parameters are to be supplied (see SCID: IH019 and IH031).

The user is occasionally given the opportunity to "search" for a chemical, department, or job code or to "edit" program code (see SCID: IH019 and IH020). Whenever the user expresses a desire to perform any of these functions, he is brought into the ISPF full screen editor (see SCID: IH021). This editor is somewhat different than SAS FSEDT. To "search" for a chemical code, simply enter the command "F CHEMICALNAME" on the command line. There should be no blanks in the character string to be found. It is not necessary to enter the entire name of the chemical, since every occurrence of the string entered will be found, one at a time, starting at the top of the file. PF5 will duplicate the last FIND statement. If it is necessary to include a blank character in the string to be found, the user must place the string in single quotes (e.g. F 'VINYL CHLORIDE').

When the FIND command has been entered, the user will be brought to the first occurrence of the character string (see SCID: IH022). Pressing PF5 will take the cursor to the next occurrence and so on. To return to the report query screen after the information has been found, the user presses PF3.

The same procedure is used to search for department and job class codes. The user should keep in mind that job codes are preceded by a "3" in the file being searched and department codes by a "6" (see SCID: IH023 and IH024). This will often help in locating the correct code more quickly.

After the appropriate parameters have been specified, the user is given the opportunity to submit the job as is or to start over. If an erroneous parameter is accidentally entered, the user simply specifies "N" when he is asked whether he wishes to submit the report as requested. This will bring him back to the main menu where the query session begins again.

After the user is satisfied with his responses and the job is submitted, the computer will assemble the job control language and present the user with the option of editing the SAS code, the Easytrieve code, or the JCL code or submitting the job as is. This option gives the user the ability to further fine-tune the selection criteria (via Easytrieve) or to modify the report format (via SAS). These functions require the user to have a basic knowledge of either the SAS or the Easytrieve languages. If the user desires to make further refinements, he should refer to the appropriate user's guide for SAS and Easytrieve.

The user can also change the number of copies to be printed or bring the output back to the screen before printing it. These latter two changes are made by editing the JCL code. In all instances the user is brought into the ISPF EDITOR. Under normal circumstances, once a job is submitted, a printed report is generated on the printer at the location from which the job is submitted.

JCL EDITS

- Changing the Number of Copies

To change the number of copies received, the user chooses the option to edit the JCL by entering a "J" in SCID: IH037. He will first be brought into the ISPF EDITOR in the EASYxxxx.CNTL file. The user then presses the PF3 key which takes him out of this file and into the SASxxxCNTL file (see SCID: IH039). To change the number of copies to be printed, the user simply moves the cursor to the fourth line "// DATA1 DD SYSOUT = A, COPIES = 1" and changes the "COPIES = 1" to whatever number is desired, up to 9 copies. When finished, the user presses PF3 and submits the job when requested to do so.

- Bringing the Output Back to the Screen

To bring the output back to the screen, the user enters "J" to edit JCL. Once in the ISPF EDITOR, "MSGCLASS = A" is changed to "MSGCLASS = Q" (line 2) and both occurrences of "SYSOUT = A" are changed to "SYSOUT = Q" (lines 30004 and 40004) (see SCID: IH038).

The user then presses PF3 to edit the SASxxxx.CNTL file. Once again, all of the "SYSOUT = A" are changed to "SYSOUT = Q" (lines 20006, 30006 and 40011).

Note: If there will be no need to review system messages and only the report is desired to be seen, then all of the "SYSOUT = A" message except the one after // DATA1 DD should be changed to "SYSOUT = Z" instead of "SYSOUT = Q." This will repress the printing of all except the report.

After the job has been submitted, the user will generally have to wait about five minutes for it to run before the report can be viewed on the screen. The status of the job can be checked by entering "ST" from the READY mode. After the job is complete, the user enters "LJ USERIDR," (e.g. LJ CHM0202R). This will bring the user into the "LIST JES" mode. There are normally several files to be viewed (one for each "SYSOUT = Q"). In order to page forward within a file, the user hits PF8. To page backward, PF7 is pressed. To advance to the next file, "FF" is entered on the command line. To go back one file, "FB" is entered. In order to print the output, "RELEASE NEW(A) ALL" is entered on the command line. To delete the output, "DELETE ALL" is entered. If the user tries to advance past the last file, he will be thrown back into the READY mode and will have to enter "LJ USERIDR" to get back into the "LIST JES" mode. Files are automatically deleted after three days if they are not printed or deleted from LIST JES.

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
ACF01137 CHMXXXX LAST SYSTEM ACCESS 16-18-03/07/85 FROM CH4PH21
ENTER ACCOUNT NUMBER -
C41501
CHM0202 LOGON IN PROGRESS AT 08:36:18 ON MARCH 9, 1985
----- WELCOME TO TSO AT THE PPG CORPORATE COMPUTER CENTER -----
----- CURRENT CCC STATUS INFO: X4354      HELP DESK: X4357 -----
THERE MAY BE A 30 MIN. OUTAGE ON 03/08/85 AT NOON EST FOR ALL VTAM
USERS (AFFECTING MOST TSO USERS) DUE TO DATA COMMUNICATIONS TESTING.
-- END OF CCC MESSAGES
READY
INCHDS
***** OK TO USE IH SYSTEM COMMANDS
READY
```

VIDEO DISPLAY SCREEN

SCID: IH001

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
READY
IHCMD5
***** OK TO USE IH SYSTEM COMMANDS
READY
MSDS
ENTER POSITIONAL PARAMETER USERID -
CHM0202
ENTER POSITIONAL PARAMETER USER -
BALDAUFF
ENTER POSITIONAL PARAMETER PLANT -
231
ENTER POSITIONAL PARAMETER ACCT -
028400
```

VIDEO DISPLAY SCREEN

SCID: IH002

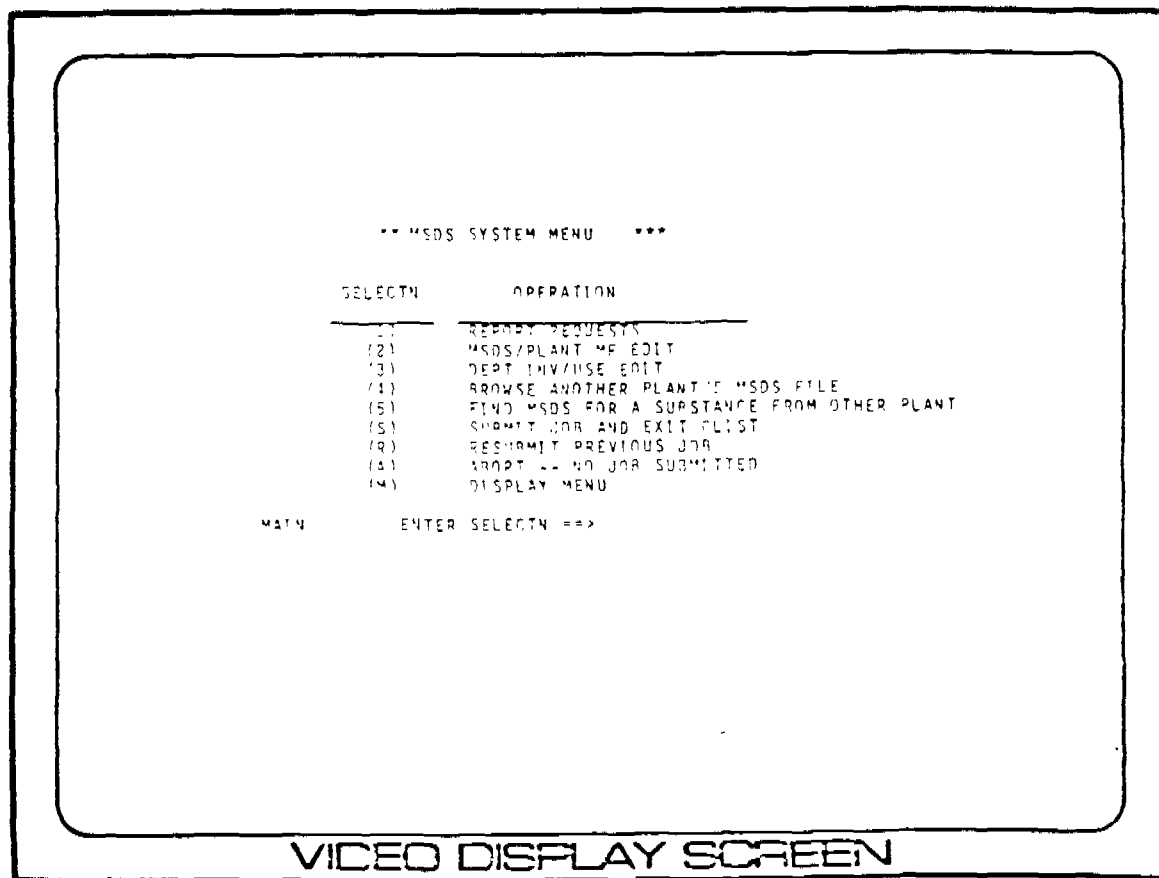
CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

READY
IHCMDS
***** OK TO USE IN SYSTEM COMMANDS
READY
MSDS CHM~~XXXX~~ BALDAUFF 231 ~~XXXX~~

VIDEO DISPLAY SCREEN

SCID: IH003

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE



SCID: IH004

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

FILES ARE BEING ALLOCATED--PLEASE WAIT.

ENTER ALL DATE OF ISSUES TO BE USED IN THE MANUFACTURER EDIT
ROUTINE TO BE CONVERTED USING THE FORMAT MMDDYY

EX: 1/1/80 ==> 010180

ENTER A BLANK SPACE AFTER ALL DATES HAVE BEEN ENTERED

ENTER DATE(OR 'NONE')==> 101080

ENTER DATE(OR 'NONE')==> 022083

ENTER DATE(OR 'NONE')==> 011785

ENTER DATE(OR 'NONE')==>

VIDEO DISPLAY SCREEN

SCID: IH005

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

FILES ARE BEING ALLOCATED--PLEASE WAIT.

ENTER ALL DATE OF ISSUES TO BE USED IN THE MANUFACTURER COPY
ROUTINE TO BE CONVERTED USING THE FORMAT MMDDYY

EX. 1/1/80 ==> 010180

ENTER A BLANK SPACE AFTER ALL DATES HAVE BEEN ENTERED

ENTER DATE(OR 'NONE')=> 101080

ENTER DATE(OR 'NONE')=> 022083

ENTER DATE(OR 'NONE')=> 011785

ENTER DATE(OR 'NONE')=>

DONE IS STMT(S) LEVEL 002

101080

7528

022083

8451

011785

0148

SAS Dates

NOTE: SAS RELEASE R2.4 AT PPG INDUSTRIES, INC. (1746001).

NOTE: CPMD VERSION = 80 SERIAL = 21596 MODEL = 177

CPMD VERSION = 80 SERIAL = 060031 MODEL = 1733

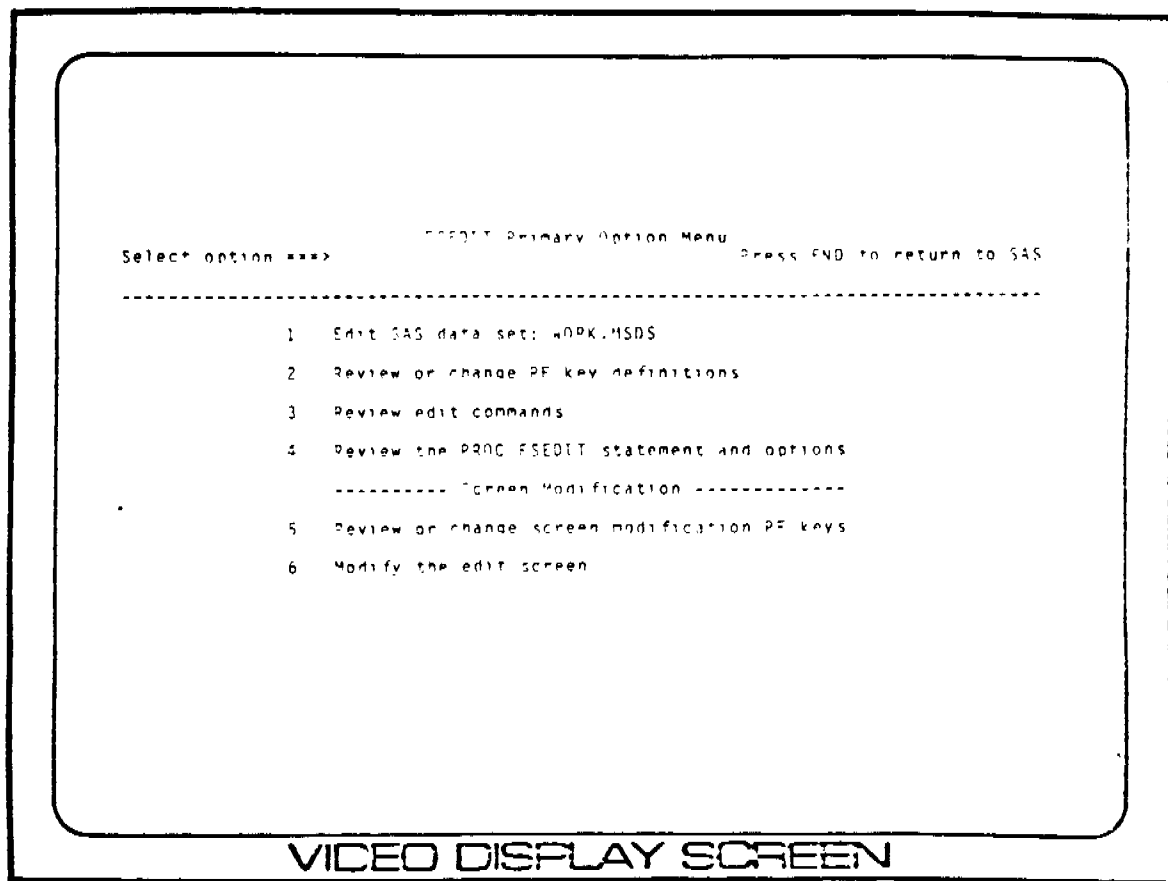
NOTE: CHARACTER VALUES HAVE BEEN CONVERTED TO NUMERIC
VALUES AT THE PLACES GIVEN BY: (LINE) (COLUMN).

4:8

VIDEO DISPLAY SCREEN

SCID: IH006

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE



SCID: IH007

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

Command ==> Edit CAS data set: WORK.MSDS

PLANT NUMBER(PCODE): 231
 CAS NUMBER(CASNO): M-1
 ACTIVE IN PLANT(ACI): Y (Y=100, N=0)
 STATUS OF USE(IST): T (P=PURCHASED, M=MERCH, C=IMPURITY, W=WASTE, I=INTERMED,
 T=TRANSFERRED TO/FROM ANOTHER DEPT, X=IMPORT, O=OTHER)

MFR/SUPPLIER#1: PPG (MFR1)	MSDS#1: 0 (MSDS1)	DOI#1: _____ (DOI1)	APPROVED(Y/N): Y (AP)
MFR/SUPPLIER#2: _____ (MFR2)	MSDS#2: _____ (MSDS2)	DOI#2: _____ (DOI2)	APPROVED(Y/N): _____ (AP)
MFR/SUPPLIER#3: _____ (MFR3)	MSDS#3: _____ (MSDS3)	DOI#3: _____ (DOI3)	APPROVED(Y/N): _____ (AP)

NUMBER OF ADD'L MFR'S NOT LISTED(NOM): _____
 (LEAVE BLANK IF NONE)

SACDATE OF ENTRY(DOE): 4500
 (DEFAULTS TO TODAY IF BLANK)

***NOTE: MSDS# EQUAL TO ZERO (0) DENOTES A "NONHAZARDOUS" CHEMICAL FOR WHICH NO MSDS IS DEEMED NECESSARY.

VIDEO DISPLAY SCREEN

SCID: IH008

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

Edit SAS data set: WORK.MSDS		Screen 1
Command ==> F CASNO = 108-24-7		Obs 1

PLANT NUMBER(PCODE): 231		
CAS NUMBER(CASNO): T31-1		
ACTIVE IN PLANT(ACT): Y ('Y' OR 'N')		
STATUS OF USE(ST): P (P=PURCHASED, M=MFR'D, C=IMPURITY, W=WASTE, I=INTERMED, T=TRANSFERRED TO/FROM ANOTHER DEPT, X=IMPORT, O=OTHER)		
MFR/SUPPLIER#1: GENERAL IONICS	MSDS#1: _____	DOI#1: _____ APPROVED(Y/N): N
(MFR1)	(MSDS1)	(DOI1) (AP)
MFR/SUPPLIER#2: _____	MSDS#2: _____	DOI#2: _____ APPROVED(Y/N): _
(MFR2)	(MSDS2)	(DOI2) (AP)
MFR/SUPPLIER#3: _____	MSDS#3: _____	DOI#3: _____ APPROVED(Y/N): _
(MFR3)	(MSDS3)	(DOI3) (AP)
NUMBER OF ADD'L MFR'S NOT LISTED(NOM): _		SASDATE OF ENTRY(DOE): 3509
(LEAVE BLANK IF NONE)		(DEFAULTS TO TODAY IF BLANK)
***NOTE: MSDS# EQUAL TO ZERO (0) DENOTES A "NONHAZARDOUS" CHEMICAL FOR WHICH NO MSDS IS DEEMED NECESSARY.		

VIDEO DISPLAY SCREEN

SCID: IH009

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

Command ==>

*** CAS data set: WORK.MSDS

Screen 1
Obs 04

PLANT NUMBER(PCODE): 231
 CAS NUMBER(CASNO): 108-24-7
 ACTIVE IN PLANT(ACT): Y (Y=1, 0=0, N=0)
 STATUS OF USE(ST): P (P=PURCHASED, M=MERID, C=IMPORT, W=WASTE, I=INTERMED, T=TRANSFERRED TO/FROM ANOTHER DEPT, Y=IMPORT, O=OTHER)

MFP/SUPPLIER#1: EASTMAN CHEMICAL	MSDS#1: 167	DOI#1: 8608	APPROVED(Y/N): Y
(MFP1)	(MSDS1)	(DOI1)	(AP)
MFP/SUPPLIER#2: ASHLAND CHEMICAL	MSDS#2: 43	DOI#2: 8634	APPROVED(Y/N): Y
(MFP2)	(MSDS2)	(DOI2)	(AP)
MFP/SUPPLIER#3: UNION CARBIDE	MSDS#3: 167	DOI#3: 248	APPROVED(Y/N): Y
(MFP3)	(MSDS3)	(DOI3)	(AP)

NUMBER OF ADD'L MFR'S NOT LISTED(NOM): — DATE OF ENTRY(DOE): 8126
 (LEAVE BLANK IF NONE) (DEFAULTS TO TODAY IF BLANK)

***NOTE: MSDS# EQUAL TO ZERO (0) DENOTES A "NONHAZARDOUS" CHEMICAL FOR WHICH NO MSDS IS DEEMED NECESSARY.

VIDEO DISPLAY SCREEN

SCID: IH010

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

Command ==>		Edit SAS data set: WORK.DPT	1 Screen
			2 Obs

PLANT NUMBER(PCODE): 211			
CAS NUMBER(CASNO): 105-64-6			
DEPARTMENT CODE(DCODE): INIT			
QUANTITY USED(QTY): 1.12			
UNITS(UL): T (L=POUNDS, T=TONS, G=GALLONS, C=CUBIC FEET)			
FREQUENCY OF USE(FU): 2 (1=CONTINUOUS, 2=DAILY, 3=WEEKLY, 4=MONTHLY, 5=YEARLY)			
DESCRIPTION OF USE(DOU): PRODUCT-ORGANIC PEROXIDE			
ACTIVE IN DEPT(OACT): Y DATE OF ENTRY(OAE): 8557			
(DEFAULTS TO TODAY IF BLANK)			
POTENTIALLY EXPOSED JOB CLASSES:			
*1	*2	*3	*4
*6	*7	*8	*9
*11	*12	*13	*14

VIDEO DISPLAY SCREEN

SCID: IH011

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

EDIT

REPORT REQUEST MENU

SELECTN	REPORT
---	---
---	*** MAIN MENU INDEX ***
(01)	01L DEPARTMENT MSDS INDEX/LISTING
(02)	02M CHEMICALS WITH APPROVED MSDS'S
(03)	03H CHEMICALS WITHOUT APPROVED MSDS'S
(04)	04L INVENTORY UPDATE LISTING
(05)	05M CHEMICALS WITH OUT-OF-DATE MSDS'S
(06)	06P INVENTORY BY PLANT--(SUMMARY)
(07)	07C DETAILED PLANT INVENTORY
(08)	08P CHEMICAL PRESENCE IN PLANT
(09)	*** NO REPORT IS RESERVED ***
(10)	10T PRINT CHEM, SYNON, TRADE NAMES
(11)	11J PRINT PLANT, DEPT, JOB TABLES
(12)	12J RETURN TO MAIN MENU
(13)	13J DISPLAY THIS MENU

00 ENTER SELECTN *** 1

00 ENTER SELECTN *** 3

VIDEO DISPLAY SCREEN

SCID: IH012

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

ENTER : F TO EDIT JCL
A TO ABORT
KOPS TO SUBMIT JOB ##> E
DO YOU WANT TO USE THE ISPF EDITOR (Y/N)? ##> Y

VIDEO DISPLAY SCREEN

SCID: IH013

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
EDIT --- CHM0001.C2R4MSDS.CNTL ----- COLUMNS 001 022
COMMAND ===>                                0001L 0001 0001
***** TOP OF DATA *****
000100 //CHM0001M JOB (CH001,CH001),TS0,BALDAUFF,CLASS=A,
000200 //             MSGCLASS=A,TIME=1
000300 //CNTL MSDS,EXT
000400 //ROUTE PRINT LOCAL
000500 //*****
000600 //***** MSDS CATALOG JOB SUBMITTED AT 08:59:58 ON 09/21/84
000700 //***** SASEXEC PROCESSES THE TRANSACTIONS IN THE PLANT FILE
000800 //***** PRINT USES LISTCTL TO PRINT THE ARDOR FILE
000900 //***** EMPTY DELETES THE PLANT TRANSACTION FILE
001000 //*****
001100 //***** MAINTENANCE AND REPORTS SEGMENT TRANSACTIONS IN CHM0202.C2R400.M
001200 //*****
001300 //SASEXEC EXEC SAS
001400 //FT11F001 DD SYSOUT=Z
001500 //FT12F001 DD SYSOUT=A
001600 //SASLIR DD UNIT=SYSDA,SPACE=(TRK,(30,10,10),PLSE)
001700 //ERR DD DSN=44FRR,UNIT=SYSDA,SPACE=(TRK,(10,10,10),PLSE),
001800 //             DISP=(NEW,PASS),DCP=1,RECL=137,RECFM=FB,RLKSIZ=13701
001900 //LISTTF DD SYSOUT=A
002000 //TRANS DD SYSOUT=A,COPIES=1
002100 //SYSOUT DD SYSOUT=Z
```

VIDEO DISPLAY SCREEN

SCID: IH014

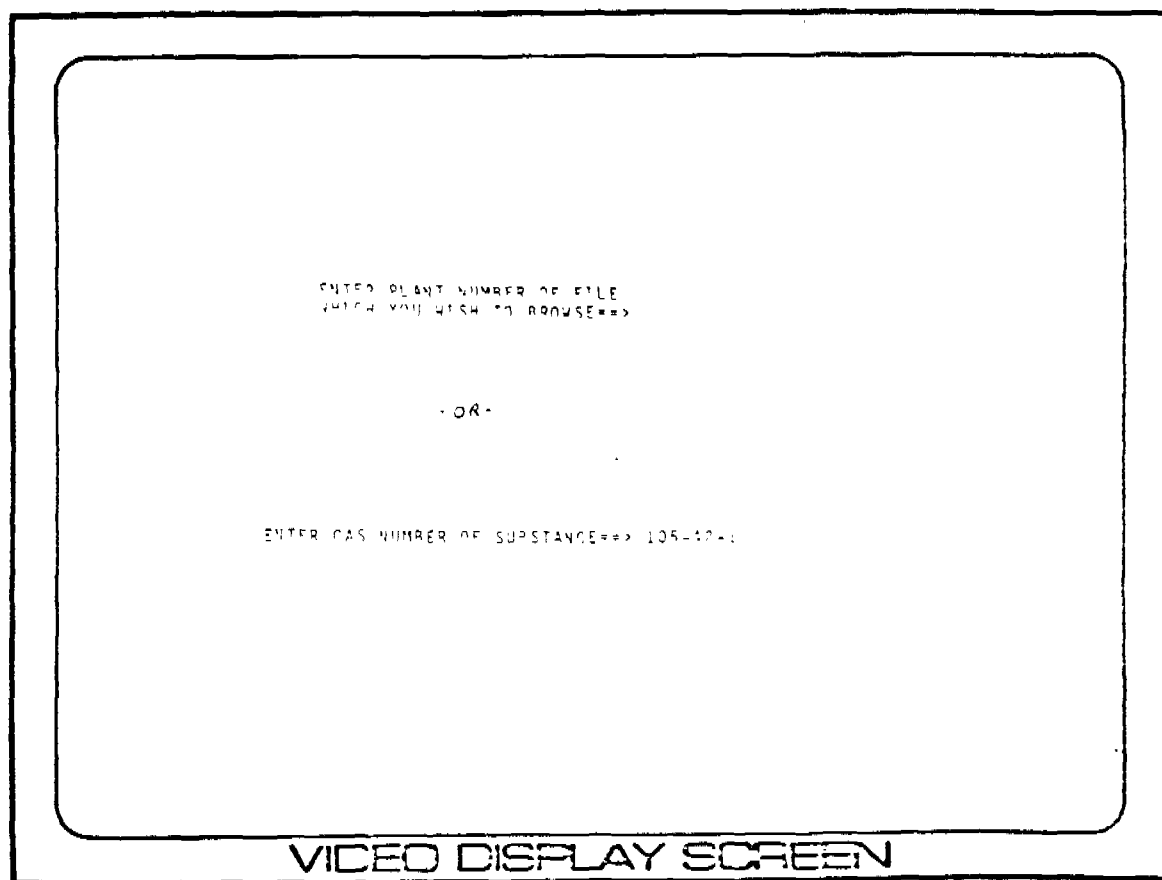
CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
EDIT --- CHMXX.C2R4MSDS.FNTL ----- COLUMNS 001 072
COMMAND ===>
002200 //SASDATA2 DD DSN=CHM0202.C2R400.SASDATA2,DISP=OLD
002300 //MSDS01 DD DSN=CHM0202.C2R400.MSDS231,DATA,DISP=SHR
002400 //APTARLE DD DSN=CHM0202.C41501.APTARLE,DATA,DISP=SHR
002500 //SYSIN DD DSN=PPG.UTLTYLIR(CGEA0036),DISP=SHR
002600 // DD DSN=PPG.UTLTYLIR(CGEA0019),DISP=SHR
002700 // DD DSN=PPG.UTLTYLIR(CGEA0023),DISP=SHR
002701 // DD DSN=PPG.UTLTYLIR(CGEA0014),DISP=SHR
002702 // DD DSN=PPG.UTLTYLIR(CGEA0019),DISP=SHR
002703 // DD DSN=PPG.UTLTYLIR(CGEA0021),DISP=SHR
002704 // DD DSN=PPG.UTLTYLIR(CGEA0001),DISP=SHR
002705 // DD DSN=PPG.UTLTYLIR(CGEA0003),DISP=SHR
002706 // DD DSN=PPG.UTLTYLIR(CGEA0037),DISP=SHR
002800 //SPRINT EXEC PGM=L1STUT:L,
002900 // PARM=' , ,0,0000,1'
003000 //SYSPRINT DD SYSOUT=A,DCR=RLKSIZE=1330
003100 //SYSUT1 DD DSN=44ERR,DISP=(OLD,DELETE)
003200 //SYSUT2 DD SYSOUT=(A,,FORM)
003300 //EMPTY EXEC PGM=IEFRR14
003400 //DD1 DD DSN=CHM0202.C2R400.MSDS231,DATA,DISP=OLD
***** BOTTOM OF DATA *****
```

VIDEO DISPLAY SCREEN

SCID: IH015

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE



SCID: IH016

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
IHCMD$  
***** OK TO USE IH SYSTEM COMMANDS  
READY
```

```
AP  
ENTER POSITIONAL PARAMETER USERID -  
CHMXXXX  
ENTER POSITIONAL PARAMETER USER -  
YOURNAME  
ENTER POSITIONAL PARAMETER ACCT -  
CXXXXX
```

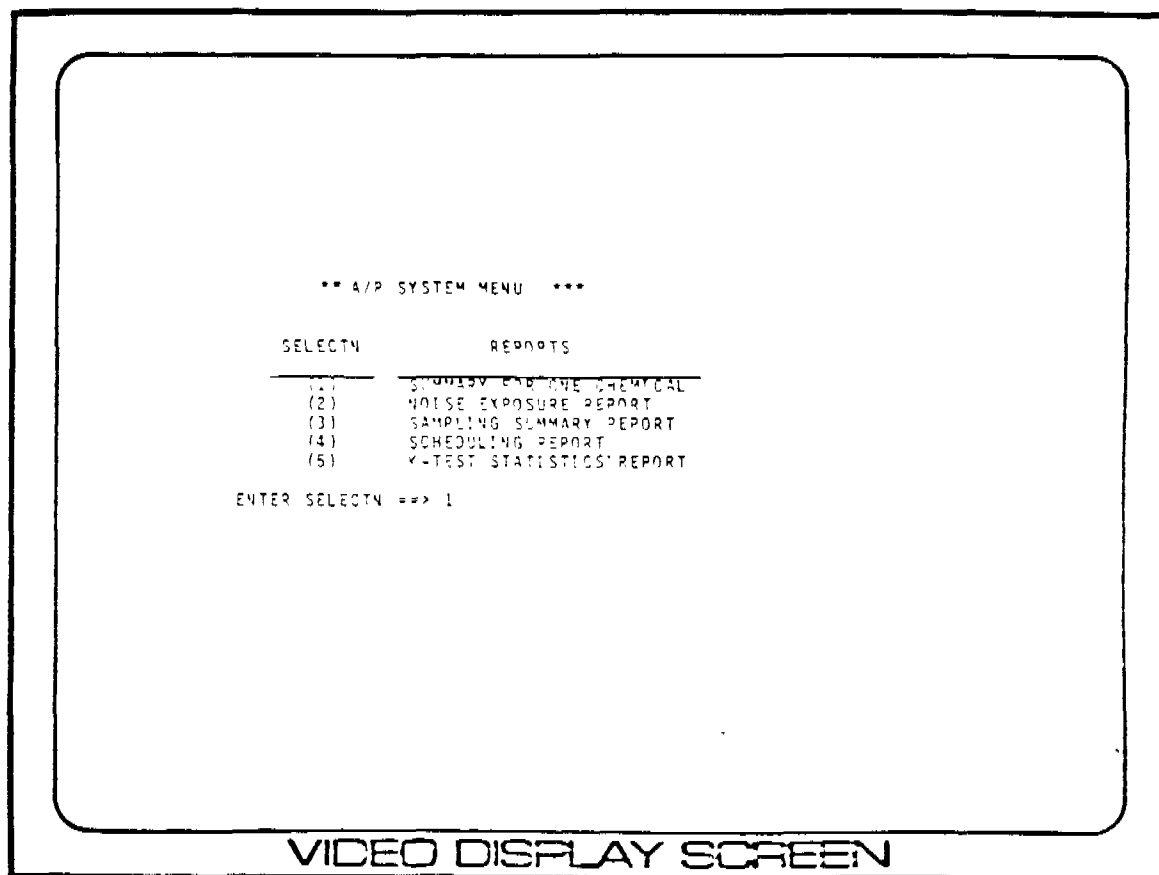
-OK-

```
READY  
AP CHMXXXX YOURNAME CXXXXX
```

VIDEO DISPLAY SCREEN

SCID: IH017

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE



SCID: IH018

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

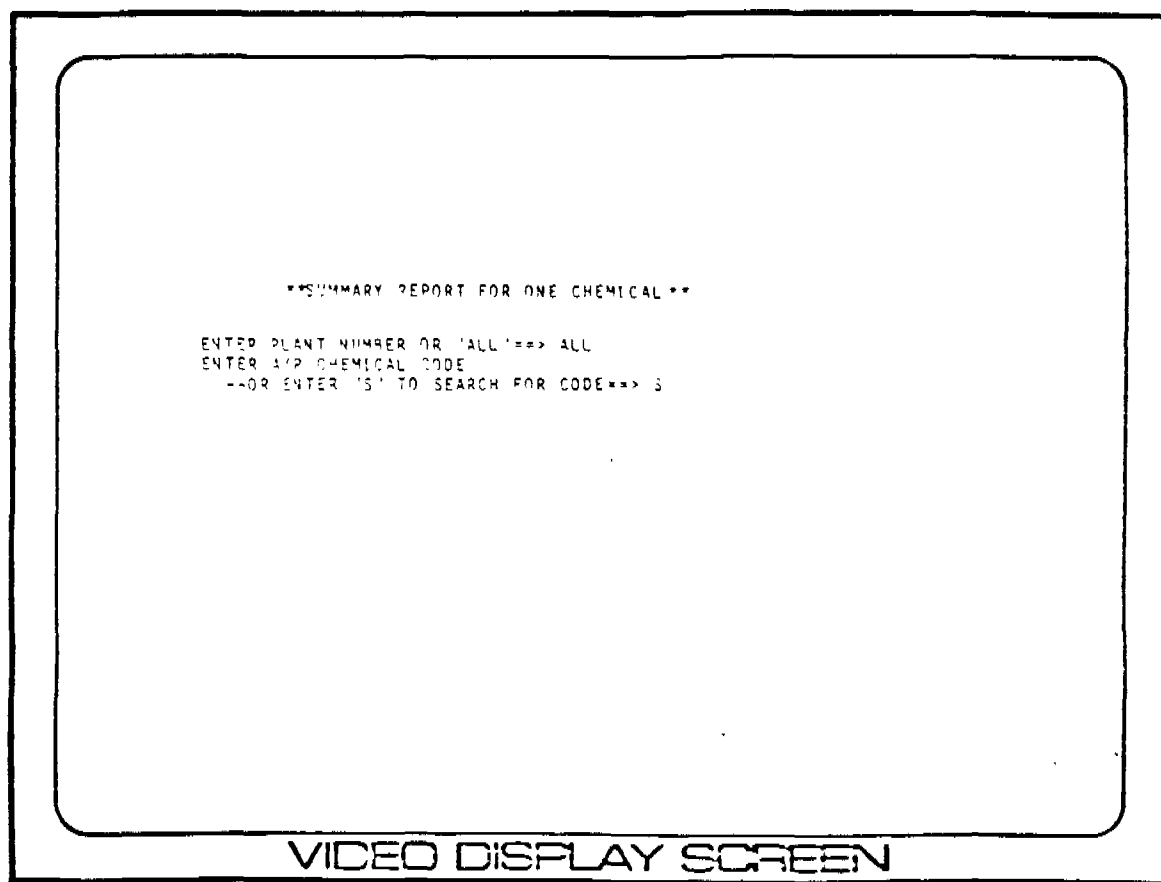
SUMMARY REPORT FOR ONE CHEMICAL

```
ENTER PLANT NUMBER OR 'ALL'==> 25'  
ENTER A/P CHEMICAL CODE  
--OR ENTER 'S' TO SEARCH FOR C' ==> VCM  
ENTER CHEMICAL NAME(15 CHARS OR L -NO BLANKS)==> VINYL-CHLORIDE  
ENTER A/P DEPT CODE OR 'ALL'  
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL  
ENTER A/P JOB CODE OR 'ALL'  
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL  
DO YOU WANT SAMPLE COMMENTS TO BE PRINTED?(Y/N)==> Y  
ENTER START-DATE(Y/M/D) OR 'ALL'==> ALL  
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==> Y  
  
JCL IS BEING ASSEMBLED. PLEASE WAIT.  
  
ENTER: E TO EDIT EASYTRV CODE  
        S TO EDIT SAS CODE  
        J TO EDIT JCL CODE  
        A TO ABORT  
        <CR> TO SUBMIT JOB ==>
```

VIDEO DISPLAY SCREEN

SCID: IH019

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE



SCID: IH020

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```

EDIT --- CHM[XXX].APTA8.DAT ----- COLUMNS 001 060
COMMAND ==> F ISOPROPYL                      TOP OF DATA *****
*****
==MSG> -CAUTION- DATA CONTAINS INVALID (NON-DISPLAY) CHARACTERS.  USE COMMAND
==MSG> ==> FIND P.' ' TO POSITION CURSOR TO THESE CHARACTERS.
000003 1ACALD      ACETALDEHYDE              A
000004 1ACANH      ACETIC ANHYDRIDE            A
000005 1ACCN       ACETONITRILE                A
000006 1ACETIC     ACETIC ACID                 A
000007 1ACETON     ACETONE                     A
000008 1ACRO       ACROLEIN                   A
000009 1AG         SILVER METAL SOLUBLE CMPDA   A
000010 1AL         ALUMINUM METAL AND OXIDE    A
000011 1AL-ALC     ALLYL ALCOHOL              A
000012 1ALSALT     ALUMINUM SOLUBLE SALTS      A
000013 1AM-SIL     SYN PRECIP SILICA-TOTAL     A
000014 1AN         ACRYLONITRILE              A
000015 1ANILIN     ANILINE                    A
000016 1AS         ARSINIC                    A
000017 1ASBAM      ASBESTOS AMOSITE           A
000018 1ASBCRO     ASBESTOS CROCIDOLITE        A
000019 1ASBCRY     ASBESTOS CHRYSOTILE         A
000020 1ASBEST     ASBESTOS-TYPE UNDETERMINEA  A
000021 1ASFALT     ASPHALT FUMES (PETROLEUM)A

```

VIDEO DISPLAY SCREEN

SCID: IH021

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```

EDIT --- CHMXXX.APTAB.DAT ..... CHARS 'ISOPROPYL' FOUND
COMMAND ===> SCROLL ===> CUR
000135 IIBL ISOBUTANOL A
000136 IIPC ISOPROPYL CARBANILATE A
000137 IIPC ISOPROPYL CHLOROFORMATE A
000138 IIPP ISOPROPYL PERCARBONATE A
000139 IIPP-03 IPP-TOT.OXIDANTS AS OZONEA
000140 IIPRACT ISOPROPYL ACETATE A
000141 IISOALC ISOPROPYL ALCOHOL A
000142 IISOPHO ISOPHORONE A
000143 IIZ IODINE A
000144 IKOH POTASSIUM HYDROXIDE A
000145 ILPG LIQUIFIED PETROLEUM GAS A
000146 IMANGFU MANGANESE FUME A
000147 IMC METHYL CHLOROFORM A
000148 IMCA MONOCHLOROACETYLENE A
000149 IMCBH MONO-CHLOROBENZENE A
000150 IMCF METHYL CHLOROFORMATE A
000151 IMDC3 M-DICHLOROBENZENE A
000152 IMECL METHYL CHLORIDE A
000153 IMECYHX METHYL CYCLOHEXANE A
000154 IMEGE M-ETHYLGLYCOL M-METHYL ETA
000155 IMEK METHYL ETHYL KETONE A
000156 IMESH METHYL MERCAPTAN A

```

VIDEO DISPLAY SCREEN

SCID: IH022

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```

EDIT --- CHMXXXX.APTAB.DAT ----- COLUMNS 001 060
COMMAND ***> F 5CH                      SCROLL ***> CUR
***** TOP OF DATA *****
==MSG> -CAUTION- DATA CONTAINS INVALID (NON-DISPLAY) CHARACTERS.  USE COMMAND
==MSG> ***> FIND P... TO POSITION CURSOR TO THESE CHARACTERS.
000003 IACALD ACETALDEHYDE A
000004 IACANH ACETIC ANHYDRIDE A
000005 IACCN ACETONITRILE A
000006 IACETIC ACETIC ACID A
000007 IACETON ACETONE A
000008 IACRO ACROLEIN A
000009 IAG SILVER METAL SOLUBLE COMPO A
000010 IAL ALUMINUM METAL AND OXIDE A
000011 IAL-ALC ALLYL ALCOHOL A
000012 IALSALT ALUMINUM SOLUBLE SALTS A
000013 IAM-SIL SYN PRECIP SILICA-TOTAL A
000014 IAN ACRYLONITRILE A
000015 IANILIN ANILINE A
000016 IAS ARSINIC A
000017 IASBAND ASBESTOS AMOSITE A
000018 IASBCRO ASBESTOS CROCIDOLITE A
000019 IASBCRY ASBESTOS CHRYSOTILE A
000020 IASBEST ASBESTOS-TYPE UNDETERMINED A
000021 IASFALT ASPHALT FUMES (PETROLEUM)A

```

VIDEO DISPLAY SCREEN

SCID: IH023

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```

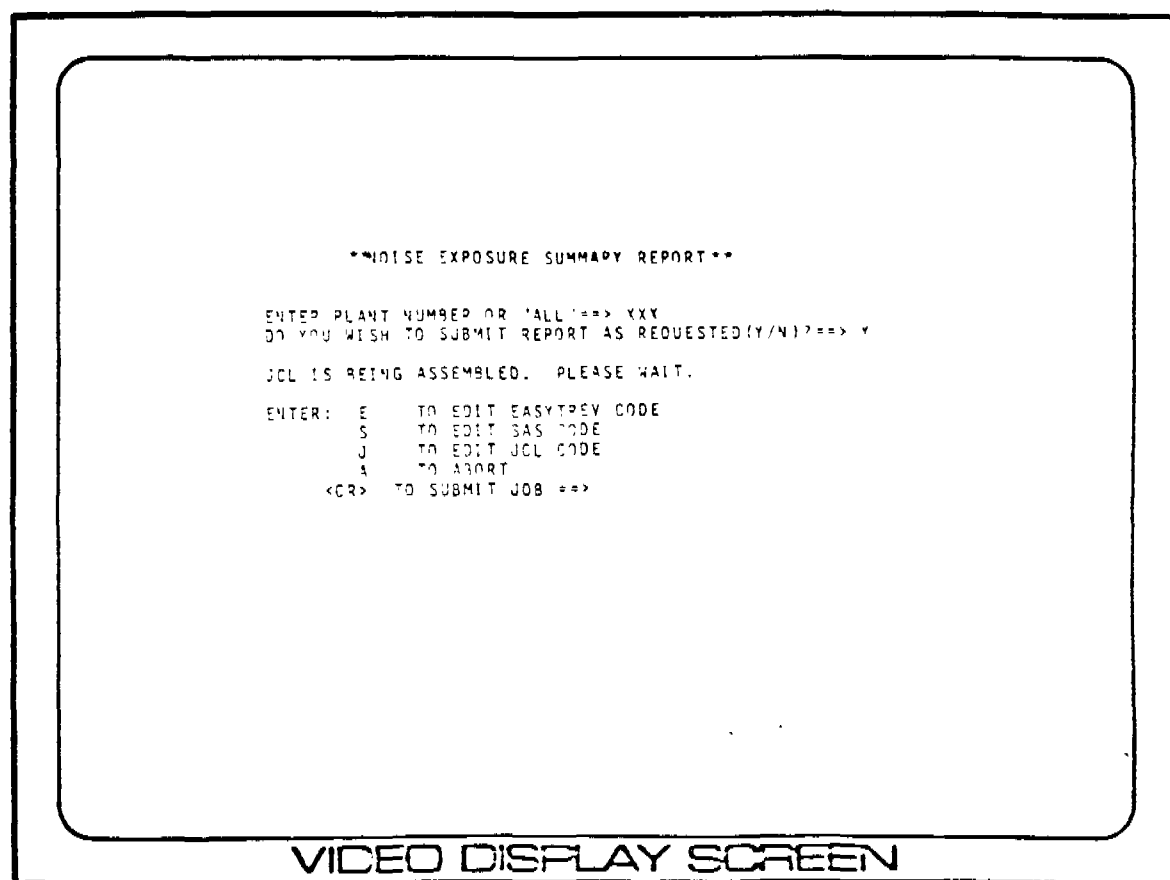
EDIT --- CHMXXXX.APTAB.DATA ----- PHARS '6CH' FOUND
COMMAND ==> SCOLL ==> CUR
001063 6CF CHLOROPHOPHATES 3
001064 6CHCA CHLORINE CAUSTIC 2
001065 6CHEM PLNT. CHEM. ENGIN 2
001066 6CHLO CHLORINE LOADING 2
001067 6CHR CHLORINE REPT. 3
001068 6CIPC CIPC PRODUCTION 3
001069 6CLEA CLEANING 2
001070 6CLNE CHLORINE 2
001071 6CL2 CHLORINE 2 L 40
001072 6CMT CEMENT DEPT. 3
001073 6CNT CONTRACTOR 2
001074 6COLR COLOR-PIGS/DYES 2
001075 6CONO DANIELS CONST. 2
001076 6CNT CONTRACTOR 2
001077 6CRME CHROME 2
001078 6CR39 CR-39 DEPT 2
001079 6CSTC CAUSTIC DEPT 2
001080 6CS2 GARRON DISULFIDE 2
001081 6DIAC ELECTROLYZ. PL2 2
001082 6DIAR DIAPH. CELL R-MF 2
001083 6DNCK DOCK AREA 2
001084 6DVL DEVELOPMENT 3

```

VIDEO DISPLAY SCREEN

SCID: IH024

CHEMICALS' INDUSTRI. HYGIENE RECORDS SYSTEM USERS GUIDE



SCID: IH025

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

***SAMPLING SUMMARY REPORT**

ENTER PLANT NUMBER OR 'ALL'==> XXX
DO YOU WANT DATA TO BE REPORTED BY DEPT(Y/N)?
(DEFAULT IS FOR ENTIRE PLANT)==> N
DO YOU WANT MIXTURE DATA(Y/N)?==> Y

SELECTN	REPORTS
(1)	ONE MONTH
(2)	TWO OR MORE MONTHS
(3)	ANNUAL

ENTER SELECTN ==> 1

VIDEO DISPLAY SCREEN

SCID: IH026

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

***MONTHLY SAMP. SUMMARY REPORT

ENTER MONTH NAME==> JANUARY
ENTER FIRST DAY OF MONTH(YYMMDD)==> 850101
ENTER LAST DAY OF MONTH(YYMMDD)==> 850131
ENTER YEAR==> 1985
DO YOU WANT INVESTIGATIVE SAMPLES TO BE REPORTED(Y/N)?==> N
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==> Y

JCL IS BEING ASSEMBLED. PLEASE WAIT.

ENTER: E TO EDIT EASYTRV CODE
S TO EDIT SAS CODE
J TO EDIT JCL CODE
A TO ABORT
<CR> TO SUBMIT JOB ==>

VIDEO DISPLAY SCREEN

SCID: IH027

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

SAMPLING SUMMARY REPORT MULTI-MONTHLY

ENTER START-MONTH NAME==> JANUARY
ENTER END-MONTH NAME==> MARCH
ENTER FIRST DAY OF START-MONTH(YVMDD)==> 850101
ENTER LAST DAY OF END-MONTH(YVMDD)==> 850331
ENTER YEAR==> 1985
DO YOU WANT INVESTIGATIVE SAMPLES TO BE REPORTED(Y/N)?==> N
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==> Y

VIDEO DISPLAY SCREEN

SCID: IH028

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

ANNUAL SAMPLING SUMMARY REPORT

ENTER YEAR==> 1985
ENTER FIRST DAY OF YEAR(Y Y M M D D)==> 850101
ENTER LAST DAY OF YEAR(Y Y M M D D)==> 851231
DO YOU WANT INVESTIGATIVE SAMPLES TO BE REPORTED(Y/N)?==> Y
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==> Y

VIDEO DISPLAY SCREEN

SCID: IH029

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

SAMPLING SCHEDULE REPORT

ENTER PLANT NUMBER OR 'ALL'==> XXX
DO YOU WANT DATA TO BE REPORTED BY DEPT(Y/N)?
 (DEFAULT 'S FOR ENTIRE PLANT)==> Y
ENTER START-DATE(YMMDD)==> 840101
ENTER END-DATE(YMMDD)==> 841231
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==> Y

JCL IS BEING ASSEMBLED. PLEASE WAIT.

ENTER: E TO EDIT EASYTRV CODE
 S TO EDIT SAS CODE
 J TO EDIT JCL CODE
 A TO ABORT
 <CR> TO SUBMIT JOB ==>

VIDEO DISPLAY SCREEN

SCID: IH030

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

K-TEST STATISTICS REPORT

ENTER PLANT NUMBER OR 'ALL'==> XXX
ENTER A/P CHEMICAL CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> VCM
ENTER A/P DEPT CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL
ENTER A/P JOB CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL
ENTER START-DATE(YYYMMDD) OR 'ALL'==> 830101
ENTER END-DATE(YYYMMDD)==> 850331
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==> Y

JCL IS BEING ASSEMBLED. PLEASE WAIT.

ENTER: E TO EDIT EASYTRV CODE
S TO EDIT GAS CODE
J TO EDIT JCL CODE
A TO ABORT
<CR> TO SUBMIT JOB ==>

VIDEO DISPLAY SCREEN

SCID: IH031

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE



SCID: IH032

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
EDIT --- CHMXXXX.SAS0847.DATA ----- COLUMNS 001 072
COMMAND ***
***** TOP OF DATA *****
010005 *****CODE FOR ONE CHEM REPORT*****
020005
030000 DATA JTABLE(KEEP=JCODE JOBTITLE)
040000     JTABLE(KEEP=DPCODE DEPT),
050000     INFILE APTABLE;
060000     DROP TTYPE;
070000     INPUT 01 TTYPE $1. 0;
080000     IF TTYPE = '3' THEN DO;
090000         INPUT 02 JCODE $6. 015 JOBTITLE $20.;
100000         OUTPUT JTABLE;
110000     END;
120000     IF TTYPE = '6' THEN DO;
130000         INPUT 02 DPCODE $4. 015 DEPT $20.;
140000         OUTPUT JTABLE;
150000     END;
160000 DATA RESULTS;
170000     INFILE CHEMCHM;
180000     LENGTH PNAME $12 PPO1 $1;
190000     INPUT 01 PCODE P02. 017 CCODE $6. 013 DATE1 P04. 024 EMPLOYEE $520.
200000         047 DURATION P03. 017 RESULT P04.3 0121 JCODE $3. 0214 SDNUM P05.
210000         0223 JCODE $6. 0229 RCODE $3. 0229 RESP $3. 0243 DCODE $4.
```

VIDEO DISPLAY SCREEN

SCID: IH033

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
ENTER PLANT NUMBER OR 'ALL'==> XXX
ENTER A/P CHEMICAL CODE
--OR ENTER 'S' TO SEARCH FOR CODE==> VCM

ENTER CHEMICAL NAME(15 CHARS OR LESS-NO BLANKS)==> VINYL-CHLORIDE
ENTER A/P DEPT CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL
ENTER A/P JOB CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL
DO YOU WANT SAMPLE COMMENTS TO BE PRINTED?(Y/N)==> Y
ENTER START-DATE(YMMDD) OR 'ALL'==> ALL
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==> Y
JCL IS BEING ASSEMBLED. PLEASE WAIT.
ENTER:  E   TO EDIT EASYTRPV CODE
        S   TO EDIT SAS CODE
        J   TO EDIT JCL CODE
        A   TO ABORT
        <CR> TO SUBMIT JOB ==> E
```

VIDEO DISPLAY SCREEN

SCID: IH034

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
EDIT --- CHM1234.EASY0847.DAT ----- COLUMNS 001 072
COMMAND ***>
***** TOP OF DATA *****
010000 PARM SCANCOL+72 MACROS+PAN
020000 FILE FILEA
030000 INCLUDE C415F420
040000 *
050000 * THE FOLLOWING IS USED TO PERMUTE MONTH-DAY-YEAR
060000 *
070000 R DATE 4-1 6 N
080000 R MA 4-1 2 N
090000 R MA 4-3 2 N
100000 R YD 4-5 2 N
110000 *
120000 X DATE 4-4 6 N
130000 X MA 4-4 2 N
140000 X MA 4-10 2 N
150000 X MA 4-12 2 N
160000 *
170000 * END OF WORK CELLS FOR PERMUTING MONTH-DAY-YEAR
180000 *
190000 YEAR 4 2 N
200000 9999
210000 *
```

VIDEO DISPLAY SCREEN

SCID: IH035

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
EDIT --- CHM200X.EASY0847.DATA ----- COLUMNS 001 372
COMMAND ****
260000 *
270000 *
280000 IF SORTED = NO THEN
290000   R*DATE = DATE
300000   X*NO = R*NO
310000   X*NO = R*NO
320000   X*DA = R*DA
330000   DATE = X*DATE
340000 *
350000 *   END OF LOGIC TO PERMUTE DATE
360000 *
370000 **TAB1
370001 IF PLANT NO 254
370002   FL*XX
370003 IF DEPT NO ENTER
370004   FL*XX
370005 IF JOB*TITLE NO ENTER
370006   FL*XX
370007 IF COMPOUND EQ XXX
380000 SORT PLANT COMPOUND DEPT JOB*TITLE DATE
390000 WRITE
***** ***** BOTTOM OF DATA *****
```

VIDEO DISPLAY SCREEN

SCID: IH036

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

***TEST STATISTICS REPORT**

ENTER PLANT NUMBER OR 'ALL'==> 254
ENTER A/P CHEMICAL CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> VCM
ENTER A/P DEPT CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL
ENTER A/P JOB CODE OR 'ALL'
--OR ENTER 'S' TO SEARCH FOR CODE==> ALL
ENTER START-DATE(Y/M/DD) OR 'ALL'==> ALL
DO YOU WISH TO SUBMIT REPORT AS REQUESTED(Y/N)?==>

JOB IS BEING ASSEMBLED. PLEASE WAIT.

ENTER: S TO EDIT BODYTEXT CODE
S TO EDIT GAS CODE
J TO EDIT JOL CODE
A TO ABORT
<CR> TO SUBMIT JOB ==> J

VIDEO DISPLAY SCREEN

SCID: IH037

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
EDIT --- CHMXXXX.EASYOR47.CNTL ----- COLUMNS 001 072
COMMAND **** SCROLL **** CHM
***** TOP OF DATA *****
000001 //CHMXXXXR JOB (CXXXXX,CH06),TSO.YOURNAME,CLASS=A,
000002 // NOTIFY=CHMXXXX,MSGCLASS=A,MSGLEVEL=(2,0),TIME=2
000003 //ROUTE PRINT LOCAL
010000 //STEP? EXEC PGM=EASYTREV
020000 //PAND01 DD DSN=CHM.C06400,PAN,DISP=SHR
030004 //SYSOUT DD SYSOUT=A
040004 //SYSPRINT DD SYSOUT=A
050005 //FILEA DD DSN=CHM.C41533,AP.MONITOR,F0420(0),DISP=OLD,
060000 // UNIT=(TAPE,DEFE)
070000 //FILEB DD DSN=44TEMP.EASY,DISP=(NEW,PASS),
080000 // SPACE=(TRK,(150,50),PLSE),UNIT=SYSDA
090000 //SORTXK01 DD UNIT=SYSDA,SPACE=(CYL,(10),PLSE)
100000 //SORTXK02 DD UNIT=SYSDA,SPACE=(CYL,(10),PLSE)
110000 //SORTXK03 DD UNIT=SYSDA,SPACE=(CYL,(10),PLSE)
110001 //SYSIN DD DSN=CHMXXXX.EASYOR47,DATA,DISP=(OLD,DELETE)
***** BOTTOM OF DATA *****
```

VIDEO DISPLAY SCREEN

SCID: IH038

CHEMICALS' INDUSTRIAL HYGIENE RECORDS SYSTEM USERS GUIDE

```
EDIT --- CHMXXXX.SAS0936.CNTL ----- COLUMNS 001 072
COMMAND ==>
***** TOP OF DATA *****
010000 //SASEXEC EXEC SAS
020006 //FT11F001 DD SYSOUT=A
030006 //FT12F001 DD SYSOUT=A
040011 //DATA1 DD SYSOUT=A,COPIED=1
050000 //ONECHEM DD DSN=4475MPEASY,DISP=(OLD,DELETE)
060010 //APTABLE DD DSN=CHM0202.CH1501.APTABLE.DATA,DISP=SHR
070010 //QCCDIST DD DSN=CHM0202.CH1501.QCCDIST.DATA,DISP=SHR
080007 //KFACTORS DD DSN=CHM0202.CH1501.KFACTORS.DATA,DISP=SHR
090009 //* TAB1
090010 //SYSIN DD DSN=CHMXXXX.SAS0936.DATA,DISP=(OLD,DELETE)
***** BOTTOM OF DATA *****
```

VIDEO DISPLAY SCREEN

SCID: IH039

10.2 -- OSHA ACCESS TO RECORDS STANDARD
PPG CHEMICALS' IMPLEMENTATION PLAN



INTER-OFFICE CORRESPONDENCE

To: PLANT MANAGERS - CHEMICAL DIVISION-U.S.
TECHNICAL CENTER MANAGERS
EMPLOYEE RELATIONS DIRECTORS
SAFETY DIRECTORS

Date: August 21, 1980
From: W. P. Lawrence
Location: 19 East
Subject: OSHA - Access to Employee
Medical and Exposure Records

By memo of August 15, 1980, from R. E. Sourwine, you received the above subject OSHA final rule which takes effect August 21, 1980. This letter contains Corporate compliance guidelines for OSHA Access Rule implementation.

Since this is a complex and possibly problem-laden matter, which could also be somewhat costly and time consuming to administer, these guidelines are issued to set the stage for a Corporate program that will comply with the Rule while providing an appropriate degree of uniformity and protection of PPG's actions.

I would like to point out one particular regulation that requires immediate action and that is "Notice to Employees" (Attachment 1).

Would you please review these guidelines and determine what, if any, problems there will be in implementing them at your location. It is our intention that if a need is apparent, a meeting would be held near term for those specifically involved with insuring compliance with this OSHA Rule.

If you have any immediate questions relative to the basic procedures or PPG's intent with respect to compliance, please contact R. E. Sourwine who will initially coordinate communications within the Chemicals Group functions and with Corporate Employee Relations and the Law Department.

W. P. Lawrence

edv

Enclosure

cc: R. A. Bart	J. P. Luvisi
Z. G. Bell	C. H. Powell
F. C. Dehn	R. E. Sourwine
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RECEIVED

AUG 25 1980

Environmental Affairs

GUIDELINES RE: OSHA RECORDS ACCESS RULE

The following compliance guidelines are being established for the purpose of enabling PPG personnel to meet the corporate objective of complying with various government regulatory laws. These guidelines are not designed to deal with every possible question which can be raised. Questions of general and far-reaching policy will be dealt with in future communications.

GENERAL OBLIGATIONS OF PPG

1. PPG must inform exposed employees upon hire and at least annually thereafter of the existence, location, and availability of records covered by the Rule, (see Notice - attachment 1), and make readily available a copy of the Rule itself.

2. Exposure records and analyses using exposure or medical records must be preserved and maintained for thirty years.

3. Employee medical records must be preserved and maintained for the duration of employment plus thirty years.

4. PPG must absorb all expenses necessary to preserve and retain relevant records for the above-stated periods.

GENERAL PROCEDURES APPLICABLE TO ANY REQUESTER

1. PPG will refuse access to exposure information when the unit can demonstrate that the toxic substance or harmful physical agent is not used, handled, stored, generated, or present in the workplace in any manner different from typical non-occupational situations.

2. PPG shall refuse to copy for a requester any record that has been previously provided (copied) unless the record contains additional information or unless the requester agrees to bear the cost of such copying.

3. PPG shall keep and maintain all relevant records in the manner in which they are presently maintained. If the medical records are not in the Company's custody, the unit will state their location (medical institution or physician's office) to the requester and make every effort to obtain the records.

EMPLOYEE REQUESTS

Discussion: All past and present employees must upon written request (ACCESS REQUEST - PPG Form _____ - attachment 2) be granted access to (1) exposure records, (2) medical records, and (3) analyses using exposure or medical records. Access must be provided at a reasonable time, place, and manner. What is "reasonable" depends on the circumstances; however, the Rule requires that the employer's work schedule need not be unduly disrupted or the employee unduly inconvenienced.

Procedures:

1. Employee access shall not be provided during their regular working hours.

2. Access must be provided within fifteen calendar days of a request.

3. The Company shall withhold (by deletion) from the employee, but not the designated representative, medical information relating to terminal illness or psychiatric condition that, in the physician's opinion, would be detrimental to the employee's health. In such cases employees will be informed of the deletion and encouraged to use their personal physician as designated representative.

4. After review, should the employee request a copy of the records, the Company shall make arrangements for the employee to obtain a copy of the requested records. No original records of any type are to be given to the employee at any time except for inspection and review purposes.

5. An ACCESS REQUEST (PPG Form _____) must be obtained when the employee requests his own medical records. This will serve to document an authorized release of medical information should that information somehow find its way into the hands of a third party.

6. PPG shall refuse access to employee's portions of analyses using medical records containing personal identifiers, if it can be shown that removal of the personal identifier portions is not feasible. (If deletion is feasible, PPG has the obligation to delete personal identifier information.)

7. PPG shall delete trade secret data which discloses manufacturing processes or the percentage of a chemical substance in a mixture. The employee must be notified of the deletion, however. As an alternative, PPG can secure a confidentiality agreement from the employee.

DESIGNATED REPRESENTATIVE'S REQUEST

Discussion: Under the Rule there are two types of "designated representatives": (1) the employee's collective bargaining agent and (2) any other third party.

Procedures for the Collective Bargaining Agent:

1. The same procedures as listed under EMPLOYEE REQUESTS Section.
2. In addition, when medical records are requested, a Specific Written Consent (PPG Form 7357, attachment 3) must be provided.
3. The Company cannot delete any medical information.

Procedures for Other Third Party "Designated Representative":

1. The same procedures as listed under EMPLOYEE REQUESTS Section and Collective Bargaining Agent provision above.
2. In addition, when exposure records are requested and/or analyses using exposure or medical records, a Written Authorization (attachment 4) must be provided.

OSHA REQUESTS

Discussion: OSHA requests must be handled in a different manner from employee and designated representative requests.

Procedures for OSHA Requests are as Follows:

1. PPG may demand a search warrant before admitting investigators to review requested records.
2. OSHA is to be provided immediate access as opposed to fifteen days for other requesters.
3. The Company cannot delete any medical information.

4. PPG shall require OSHA to bear the expense incurred in the copying of requested records.

5. When medical records are requested, a Written Access Order (OSHA Form) must be presented by the OSHA Representative named on the Order.

6. Personal identifiers in analyses using medical records cannot be deleted.

7. The Rule does not provide for deleting trade secret information. PPG shall use a special transmittal letter (attachment 5) when handing over documents containing proprietary information.

NOTICE TO ALL EMPLOYEES

1. EXPOSURE, MEDICAL, AND ANALYSIS USING EXPOSURE AND MEDICAL RECORDS ARE MAINTAINED FOR THIS WORKPLACE. THEY ARE LOCATED AT _____ AND ARE AVAILABLE FOR YOUR INSPECTION.

2. THE PERSON RESPONSIBLE FOR MAINTAINING AND PROVIDING ACCESS TO THESE RECORDS IS _____

3. YOU HAVE RIGHTS OF ACCESS TO THESE RECORDS.

4. A COPY OF THIS OSHA RULE IS AVAILABLE BY CONTACTING _____



Last Name

First Name

Middle Initial

Date

Social Security No.

AUTHORIZATION TO RELEASE MEDICAL INFORMATION FROM PPG INDUSTRIES

I hereby authorize PPG Industries to disclose medical information in its possession on the person named above to (name and address) _____

in regard to (cite specific illness, disability or research study):

- (a) This medical information is released with the stipulation that the medical information released, with all copies, will be returned to PPG Industries within _____ Initial _____
- (b) This information will not be disclosed to others except with my written permission or except as required by law. Initial _____
- (c) PPG Industries is authorized to release information from my medical file related to the purpose stated above and to individual named above for _____ from this date. Initial _____
- (d) a, b, and c above are not applicable (to be used when release is to the family physician). Initial _____
- (e) PPG Industries is authorized to release information from my medical file covering the period _____ to _____ Initial _____

Witness

Signature

Signer -- indicate relationship to person named in statement above (viz: "self," "executor," "attorney," or other status).
If other than self, submit proof of capacity to act for the person named above.

ACCESS REQUEST

Date _____

I, _____, request PPG
(Requester)

to provide access to the following in accordance with 29 C.F.R. §1910.20:

Signature

--	--

Number Time

PPG Form _____

WRITTEN AUTHORIZATION

I, _____, hereby name
_____ to be my "Designated
Representative" for purposes of the OSHA Access Records Rule and
authorize him/her to have access to the following exposure records
and analyses using exposure or medical records:

(Type Employee's Name)

Date: _____

PROPOSED DOCUMENT TRANSMITTAL LETTER

To: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

Re: Records requested pursuant to 29 CFR §1910.20, as amended (Exposure/Medical Records Access Rule)

Attached are copies of the records that you requested be made available to the Occupational Safety and Health Administration by PPG Industries, Inc.

Many of the documents submitted herewith contain information which PPG regards as confidential largely because they concern or relate to highly sensitive personal information or proprietary information including, but not limited to, trade secrets, processes, operations, style of work or apparatus, or to commercial or statistical data, which in the hands of third parties could be competitively harmful to PPG.

Accordingly, you are advised that PPG requests such documents be accorded confidential treatment and, consequently, be exempted from disclosure under the Freedom Of Information Act or otherwise to any third party. The statutory and regulatory bases for the requested exemption are, among others, the Freedom of Information Act [5 USC §552(b) (3), (4), (6), and (7)], the Trade Secrets Act (18 USC §1905) and the OSHA's Freedom Of Information Act regulations (29 CFR §2201 et seq. and §70.26, 70a.3.)

The submission of these records is being made with the understanding that OSHA will afford PPG adequate prior notice (1) of any determination by OSHA not to accord confidential treatment to all or any of such documents or the information contained in such documents and/or (2) of any request of OSHA by any third party, or the commencement of any proceedings by any third party to cause OSHA, to disclose all or any of such documents or the information contained in such documents and on the further understanding that OSHA will not disclose all or any of such documents or the information contained in such documents in any ruling or other document that would be subject to disclosure under the Freedom Of Information Act or otherwise. Such notice may be afforded by telephoning the undersigned at _____.

PPG requests that all of the attached documents be returned to it upon the completion of OSHA's investigation and/or use with respect to the reason for requesting access pursuant to 29 CFR §1910.20.

PPG REPRESENTATIVE

Attachment 6

Guide to Selection of Access to Records Forms

Requestor	Type of Records Requested		
	Medical	Exposure	Analyses
Employee	Access Request Form	Access Request Form	Access Request Form
Designated Representative	PPG Form 7375	Written Authorization Form	Written Authorization Form
Union	PPG Form 7375	Access Request Form	Access Request Form
OSHA	OSHA Form*	Access Request Form**	Access Request Form**

* This will be a government OSHA written access order that the OSHA compliance officer will present.

**Desirable but not required.

/ta
8/20/80

SUPPLEMENT TO GUIDELINES RE: OSHA RECORDS ACCESS RULE

With respect to the previously issued guidelines certain clarifications and/or additional information is provided herein:

1. Under the heading GENERAL OBLIGATIONS OF PPG on page 1 of the GUIDELINES the requirements for the preservation and maintenance of records are given. Because in many instances medical records will be in the custody of outside health care services, PPG shall notify the parties (physicians, health facilities, clinics etc.) of these requirements. In situations where there is no reason for the outside party to maintain and preserve the medical records, the records shall be transferred to PPG for compliance with this continuing responsibility.

2. It is extremely important to be wary of the requirement that, as an exception to the requirement that records can be preserved in any form, manner, or process, "X-ray films shall be preserved in their original state." All outside physicians must be notified of this requirement.

3. The GUIDELINES are not the final word on compliance. There are requirements in the Rule which are not covered in the GUIDELINES for reasons of brevity and simplification.

4. Certain forms attached to the GUIDELINES (ACCESS REQUESTS, PPG FORM 7357 (revised), and the Written Authorization) are being printed and should be available through Stationery Standardization in approximately two weeks.