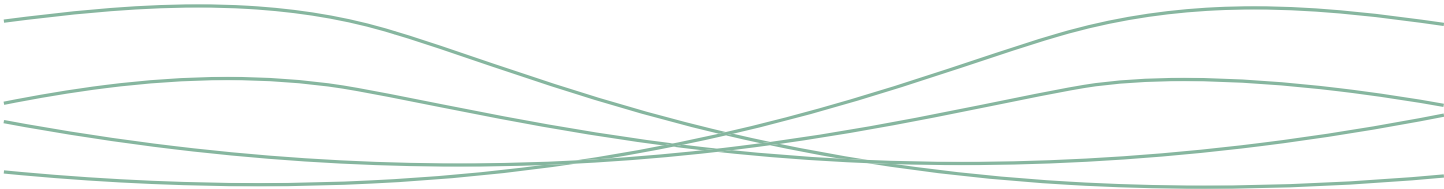


Workbook for Designated Substance Assessments



IAPA

It's About Making A Difference.

Workbook for Designated Substance Assessments

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DESIGNATED SUBSTANCE ASSESSMENT

	SUBSTANCE:
	DATE:
COMPANY NAME:	
DEPARTMENT OPERATION(S):	
LOCATIONS:	
ASSESSMENT PREPARED BY:	
Title	Name
DATE PREPARED:	

SECTION 1: INTRODUCTION

Purpose Of This Workbook

The *Occupational Health and Safety Act* allows for certain toxic substances to be especially designated. This means that specific regulations are constructed for the control of these substances in the workplace. Accordingly, each *Designated Substance Regulation* outlines a set of required steps to control exposure of workers to the substance. Where a regulation applies to a workplace, the employer must conduct an assessment to determine whether the health of a worker may be affected by exposure to the substance. This publication can assist you in carrying out your responsibilities under the law.

Occupational Hygienists and Occupational Health Engineers normally do the more technical parts of this task, especially in larger firms. However, if you do not have these professionals on staff, it is possible to retain their services on a short-term basis.

The workbook will help you to decide if a Designated Substance Regulation applies to your workplace; where it does, the workbook will also help you prepare a written assessment. This method can also be applied to the assessment of other toxic substance that are not currently designated. Once an assessment has been made, you will be better able to identify the appropriate controls.

At the present time, the following substances have been designated:

- > acrylonitrile
- > arsenic
- > asbestos
- > benzene
- > coke oven emissions
- > ethylene oxide
- > isocyanates
- > lead
- > mercury
- > silica
- > vinyl chloride

ASSESSING DESIGNATED SUBSTANCES

Notes on Decision Diagram

Each designated substance regulation follows a similar pattern:

1. You must determine if the regulation applies to your workplace. Basically a regulation will apply if the following conditions are met:
 - the substance is present;
 - exposure is likely if the worker can come in contact with the substance in any form (i.e. solid, liquid, dust, gas, vapour, fume or mist).
2. If the regulation applies, you are required to conduct an assessment of the potential problem **in consultation with the Joint Health and Safety Committee.**

The purpose of the assessment is to determine if a worker's health may be affected because of exposure to the substance.

Note: If health is not affected because present exposure control is adequate, the response will still be YES. This is because controls may break down or become ineffective at any time.

A NO response is likely only if the amount used is very small or minimal or the physical state of the substance is such that exposure will not cause adverse effects.

Your committee should discuss a draft of the assessment. When agreement is reached, a final report should be prepared. The tear-out worksheets in the Appendix may be used for this purpose.

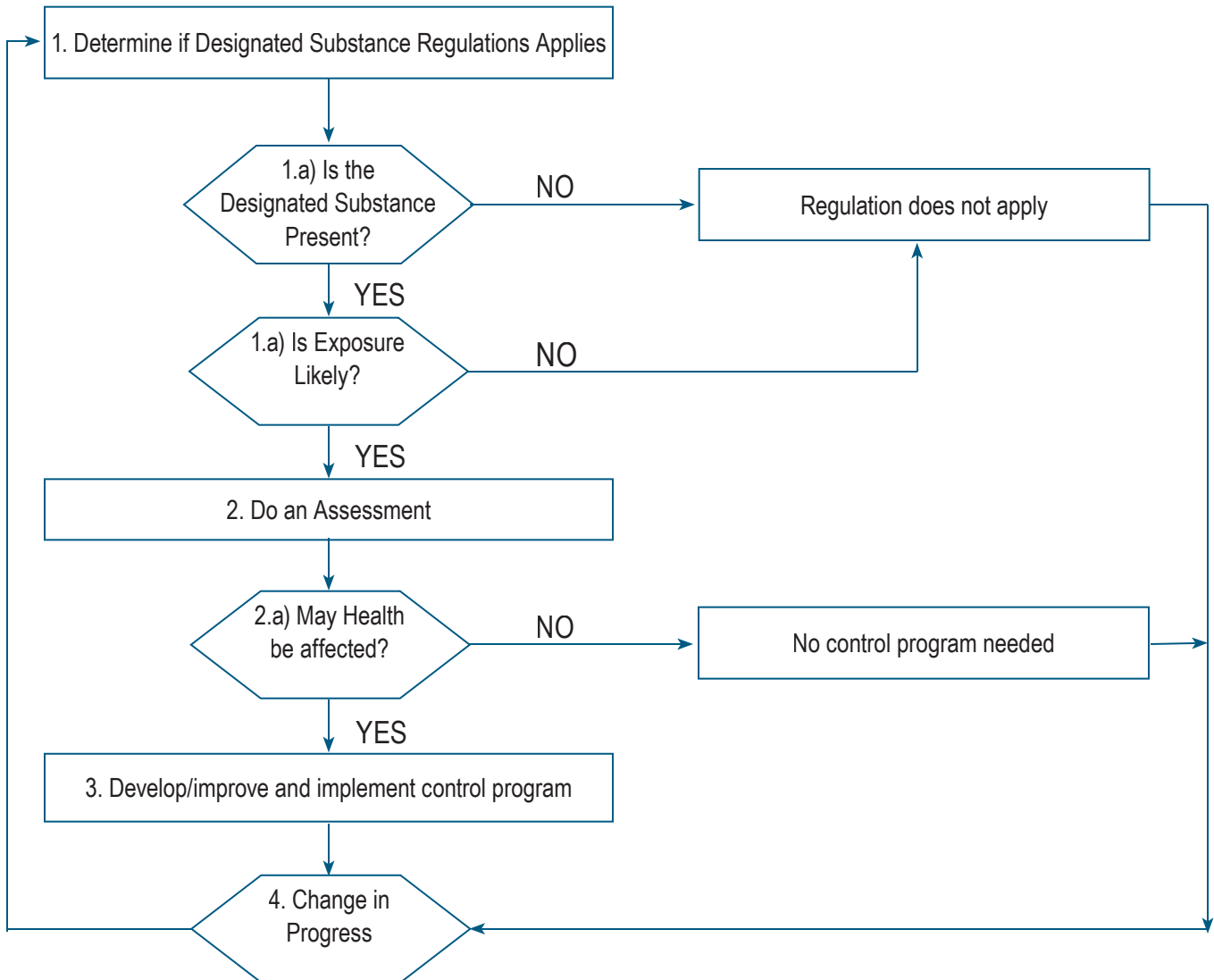
Your assessment must be in writing and a copy provided to each member of your committee. A copy should also be kept at the workplace for review by a Ministry of Labour inspector.

3. If the assessment shows that a worker is likely to be exposed to the substance and that health may be affected, you must establish a control program. The regulation for each substance details what the control program is to include. If you already have some controls, you have taken the first steps in instituting a control program and must implement any remaining requirements of the regulations.

The Joint Health and Safety Committee must be consulted about the control program. Each member of the committee must be provided with a copy of it and affected workers must be acquainted with its provisions.

4. If there is any change in process or operations in which the substance is used, you must review the situation.

Decision Diagram For Assessing Designated Substances:



Workbook Format

This workbook is designed to help you collect and analyze information for a designated substance assessment. It is comprised of various worksheets that will take you through your assessment in a systematic manner. You will find that the worksheet format is consistent throughout the workbook. Each one contains a series of questions for you to answer. The last part of this document consists of numbered guidelines that will correspond to the worksheet questions. The guidelines will help you in framing appropriate answers.

Please feel free to photocopy the worksheets.

Depending upon the nature and size of your company, you may wish to use a separate workbook for each operation or use of the substance.

Note: As you do your assessment, you should refer to the particular Designated Substance Regulation that concerns your workplace.

SECTION II: APPLICATION

Introduction

This section deals with application of the regulation. In effect, it is an initial appraisal of your situation. It will help you decide whether the regulation applies to your workplace and whether you require the written assessment covered in Section III. If you decide that the assessment is required, be sure to include your Section II worksheets in the final report.

There are two key questions to be answered in determining whether a Designated Substance Regulation applies to your workplace:

1. *Is the substance present?* This means considering whether the substance is produced, used or processed in the operation, handled or stored, generated by the process or present in the workplace.
2. *Is any worker likely to be exposed to the substance?* A worker may be exposed through inhalation, ingestion, absorption through the skin, or all of these. If the substance is present all of these possibilities must be considered.

Note: The amount of information you will need to collect will vary according to the nature of your work. In some operations, the presence of a designated substance will be obvious while in others its presence may be obscured. Proceed to the guidelines on how to approach these questions.

Application – Worksheet 1: Is The Designated Substance Present?

1. Do any material safety data sheets from your suppliers indicate the presence of the substance?

YES NO

2. If substance is present, indicate the department where it is used, nature of the use (i.e. direct or indirect) and the quantity purchased per month or year:

Product Name	Department	How Used? Direct/Indirect	Container Type/Size	Quantity used per Month/Year

TOTAL USED

CONCLUSIONS

Read statements and check applicable box:

- Substance not present anywhere in workplace; regulation does not apply. No Assessment needed.
(Note: Although you do not need to proceed further, you should retain this worksheet on record.)

Date: _____

- Processes activities have been identified where substance present.

Proceed to worksheet 2.

Application – Worksheet 2: Is Worker Exposure Likely?

1. In what form does the substance enter the plant? _____

Product title: _____ Type of container: _____

Size of Container: _____

2. Is this form altered during use or in the operation? YES NO

If YES, indicate altered form: _____

3. Is there a possibility of the substance being released into the workplace environment during normal use?

YES NO

If YES, indicate the stage of the operation or areas where this can occur.

4. If YES to Question 3, specify the job functions and approximate number of employees who might be exposed:

Job Function

Number of Employees

5. If YES to Question 3, indicate how workers could be exposed:

Inhalation Skin absorption

Ingestion Skin contact

6. If NO, to Question 3, is there a likelihood of escape due to leaks, accidents, etc.?

YES NO

Are workers likely to be exposed? YES NO

CONCLUSIONS

Are there any activities/ situations where exposure by any route is likely? YES NO

If NO, no further action is necessary. Date completed: _____

If YES an assessment is necessary. – **Proceed to Section III**

Note: If protection against exposure has been left up to some engineering control measure that can fail or deteriorate for any reason, or to a work/hygiene practice, an assessment is necessary. - **Proceed to Section III.**

SECTION III: ASSESSMENT

Introduction

The purpose of an assessment is to determine if the designated substance in the workplace may affect the health of any worker. By now you have already determined that the substance is present in the workplace and that there is a possibility of worker exposure to it. Other factors have to be considered as well. You must determine the length of time that workers are exposed to the substance. It is also important to know the concentration of the substance in the workplace air. The adequacy of existing controls must be established as well. A clear assessment of all of these factors will enable you to determine more accurately if a worker's health may be affected.

The assessment of these factors will be made easier by a step-by-step collection of information. You will want information about the process in which the substance is present. You will also need to consider the ways by which the substance can be released into the working environment as well as the ways in which workers may be exposed.

The employer is required by the regulations to consult with the Joint Health and Safety Committee; the committee may make recommendations with respect to the assessment.

Note: It may not be necessary for small firms to complete Worksheets 3 and 4. These deal with the process flows and small firms might find it easier to deal with task-related exposures. They may therefore proceed to Worksheet 5.

Following is a list of some of the human resources that you may want to use in your assessment:

- > Occupational hygienists or occupational health engineers
- > Production supervisors (for information on the process, reported problems, etc.)
- > Engineers (for information on existing controls, equipment factors, etc.)
- > Purchasing agents (for information on product source, quantities purchased, frequency of purchase)
- > Suppliers (data sheets)
- > Medical personnel (for information on physiological effects of the element)
- > Workers (for information on worksite conditions, product concerns, personal feelings, opinions regarding their health at any time)
- > Consultants (e.g. occupational hygienists, engineers, physicians, nurses)

The Section III worksheets that follow suggest a three stage approach to the assessment program. They include:

1. Collection and analysis of relevant information
2. Walk through survey of the workplace
3. Follow up investigations as necessary

Note: Air Sampling

Air sampling may be necessary where it is not possible to immediately determine the extent, or even the existence, of airborne concentrations of a substance. This quantifies airborne contamination, if any, and the findings can be used to assess the adequacy of existing or proposed controls.

A staff member who has both a full knowledge of the substance and the accepted technique for sampling it may conduct the air sampling. Otherwise, an outside consultant, preferably an occupational hygienist, will be required to do the sampling.

Assessment – Worksheets 3: Process Description

Name Of Process: _____

Process Flow*:	Description Of Task With Likelyhood Of Exposure:	Frequency Of Exposure: Hours. Per Week	Total Number Of Employees Exposed:	Control Description	Recommendations
1.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:
2.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Workpractices/Administrative: PPE: Other:

Assessment – Worksheets 3: Process Description (cont'd.)

Process Flow*:	Description Of Task With Likelihood Of Exposure:	Frequency Of Exposure: Hours. Per Week	Total Number Of Employees Exposed:	Control Description	Recommendations
3.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:
4.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:
5.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:

Assessment – Worksheets 3: Process Description (cont'd.)

Process Flow*:	Description of task with likelihood of exposure:	Frequency of Exposure: Hours, per Week	Total number of employees exposed:	Control Description:	Recommendations:
6.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:
7.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:
8.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:

Assessment – Worksheets 3: Process Description (cont'd.)

Process Flow*:	Description of task with likelihood of exposure:	Frequency of Exposure: Hours. per Week	Total number of employees exposed:	Control Description:	Recommendations:
9.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:
10.				Engineering: Work practices/ Administrative: PPE: Other:	Engineering: Work practices/Administrative: PPE: Other:

Assessment – Walk Through Survey

A walk through survey is required to confirm the information gathered to date about the process and worker's potential exposure.

A number of points should be noted about walk through surveys.

Note 1

The presence of the substance as dust or spilled liquid in the working environment, either airborne or on working surfaces or workers' clothing, is an indication of potential exposure. Careful attention should also be paid to any fumes, mists or vapours; and to any particular smells that indicate the presence of the substance in the environment. Note, however, that smell is a poor test for evidence of over exposure as many gases cannot be smelled even when they are above recommended safe limits.

Note 2

The time at which the survey is conducted should be carefully chosen. The survey should be done at a time of typical activity involving the substance. Special note should be made of any times of peak activity and how often these occur. However, it may be necessary to make several trips at different times in order to observe conditions, at different shift times, or during different activities. A visit during lunchtime might be useful for comparative purposes.

Note 3

Make sure that supervisors and workers are aware of the purpose of the walk through. Make a note of any information provided by supervisors or workers while conducting the survey. The following worksheets will help you decide what to look for and what to record during a walk through survey.

Note 4

Look everywhere and at everything that may be relevant. Ask lots of questions. Make notes on everything you see and hear, including reported health effects.

Assessment – Worksheet 4: Walk Through

Additional notes on:

Evidence of Contamination:

Hygiene Facilities and Work Practices:

Ventilation Systems:

Storage Facilities:

Assessment – Worksheet 4: Walk Through (cont'd.)

Additional notes on:

Dispensing Procedures:

Housekeeping:

Personal Protective Equipment:

Emergency Facilities Procedures:

Assessment – Worksheet 5: Walk Through Conclusions

1.(a) Where any areas found where controls are required or where existing controls may require improvement?

YES NO

1.(b) If YES, indicate the areas where the controls may be required or where existing controls may require improvement?

AREA

SUGGESTED IMPROVEMENT

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

2.(a) Is personal exposure monitoring required?

YES NO

2.(b) If YES, indicate where:

<hr/>
<hr/>
<hr/>

3. Indicate any workers for whom medical testing and or examinations may be required?

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SECTION IV: ASSESSMENT CONCLUSION

Introduction

Review and evaluate all the preceding worksheets to enable you to reach one of two conclusions:

- i. No worker's health may be affected
- ii. A worker's health may be affected

The evaluation should be done in cooperation with your joint health and safety committee.

If you are in doubt as to which conclusion to reach, consultation with occupational health experts may be necessary to help you evaluate the information you have obtained. Information about access to such experts is available from:

- > Other companies in your industry
- > Ministry of Labour
- > I.A.P.A.
- > Your Trade Association
- > Universities
- > Resource Centres

The guidelines in Worksheet 10 are designed to help you reach a conclusion and record it.

Conclusions Worksheet 6: Is A Control Program Necessary?

CONCLUSION I:

No worker's health may be affected

CONCLUSION II:

A worker's health may be affected

OVERALL CONCLUSION:

A control program is necessary. YES NO

Improvements needed in existing program:

DATE _____ SIGNED _____

SECTION V: CONTROL PROGRAMS

Regarding Control Programs

Each of the Designated Substances Regulations specifies that where your assessment reveals that a worker is likely to be exposed to the substance and that his/her health may be affected as a result, you must establish a control program. The control program is to include engineering controls, work practices, hygiene practices and facilities, procedures for monitoring the concentrations in the workplace, medical examinations and tests and record keeping.

Personal protective equipment may be used to keep exposures within prescribed limits only in emergencies where the control technology is not available or practical, or in the case of temporary breakdown of existing controls. The control program must meet the requirements set out in the regulation that applies to your workplace. **Where you already have a control program, you will need to ensure that it is in writing and that it meets these legal requirements.**

Where the assessment disclosed or would disclose that a worker is likely to inhale or come into contact with a designated substance and that the health of the worker may be affected thereby, the employer shall develop, establish, put into effect and maintain measures and procedures to CONTROL the exposure of the worker to the designated substance and shall incorporate the same into a designated substance control program.

Any control program must have provisions for:

- > **Engineering controls**, work practices and hygiene practices and facilities to control the exposure of a worker to the substance
- > Methods and procedures to **monitor the concentration** of the substance in the workplace and the exposure of the worker thereto
- > **Personal records** of the exposure of a worker to the substance at the workplace to be maintained by the employer
- > **Medical examinations** and clinical tests of a worker, and
- > **Record of medical examinations** and clinical tests of a worker to be maintained by a physician who has examined the worker or under whose direction the clinical tests have been performed.

AIR SAMPLING

The procedures for monitoring, sampling and determining the airborne concentrations of a substance in the atmosphere of a workplace and a worker's exposure to the airborne substance shall be in accordance with standard methods for workplace air sampling and analysis.

Standard methods refer to those methods published by agencies such as NIOSH (U.S. National Institute for Occupational Safety and Health), OSHA (U.S. Occupational Safety and Health Administration), HSE (U.K. Health and Safety Executive), ASTM (American Society for Testing Materials) and ISO (International Organization for Standardization), etc.

RESPIRATORY PROTECTION

Where respiratory protection is provided by an employer and used by a worker, the respiratory equipment shall be appropriate in the circumstances for the type and concentration of the airborne substance and shall meet or exceed the requirements set out in the *Code for Respiratory Equipment for each Designated Substance* (found in the Appendix of each Designated Substance Regulation)

The methods and procedures that may be used or adopted may vary from the Codes issued by the Ministry of Labour if the protection they provide or the factors of accuracy and precision used or adopted are equal to or exceed the protection, accuracy and precision in the Codes issued by the Ministry.

CAN/CSA-Z94.4-02 Selection, Use and Care of Respirators

CAN/CSA-Z180.1-00 Compressed Breathing Air and Systems

General Requirements For The Use Of Respirators

1. Subject to the above, respiratory protective equipment must be used in accordance with the procedure specified by the equipment manufacturer.
2. Written standard operating procedures governing the selection and use of respirators must be established.
3. Written procedures on use and care of respirators must be reviewed with workers.
4. Workers must be trained in the proper use of respirators and their limitations.
5. Where a respirator is designed to be tight-fitting against the face, there must be no facial hair along the face-seal area.
6. Where practical, the respirators are to be assigned to individual workers for their exclusive use.
7. Compressed air used for respirators is to meet the recommendations in Table 1 of the CSA Standard Z180.1-00, Compressed Breathing Air and Systems. The intake of the ambient breathing air system is to be located appropriately in accordance with the CSA recommendations to ensure acceptable breathing air quality.
8. Respirators must be regularly cleaned, disinfected and inspected. Those issued for the exclusive use of one worker must be cleaned after each day's use, or more often if necessary, while those used by more than one worker must be thoroughly cleaned and disinfected after each use.
9. Worn or deteriorated parts must be replaced.
10. Respirators for emergency use, such as self-contained devices, are to be thoroughly tested before each use, at least once a month, and serviced after each use.
11. All respirators and replacement parts must be stored in a convenient, clean and sanitary location.
12. Persons should not be assigned to tasks requiring use of respirators unless they are physically able to perform the work and use the equipment.
13. Workers, required to wear respirators who experience breathing difficulty while using respirators must be referred to a physician for evaluation.
14. Records of frequency of use by the worker of respiratory equipment and its type are to be kept.

MEDICAL SURVEILLANCE PROGRAM

The purpose of a medical surveillance program is to protect the health of workers by having the attending physician provide medical examinations, clinical tests, health education, and medical record keeping. The attending physician must be familiar with the Code for Medical Surveillance found within the Designated Substance Regulation. Employers should establish the competence of the attending physician by reviewing the

The medical surveillance program must consist of the following:

- > Pre-employment and pre-placement medical examinations
 - General physical examination with particular attention to those systems that may be affected by the designated substance
- > Periodic medical examinations
 - History of frequency & duration of exposure to the substance
 - Enquiry for signs & symptoms that may be an early indication of over exposure
- > Clinical tests
 - These tests aid in the assessment of the worker's fitness for and continued exposure to the substance
- > Health education
 - Workers must be made aware of the hazards of the substance and the results of their examinations must be discussed
- > Record keeping
 - The examining physician must maintain health records for each worker examined for a set length of time as defined in the Designated Substance Regulation
 - These records must include details of work history & exposure to any designated substance, results of health assessments, clinical tests and any medical steps taken

For additional information refer to the following sections in the *Occupational Health and Safety Act*:

s. 26 (1) – Additional Duties of Employers

s. 28(3) – Consent of Worker to Medical Surveillance

Resource Information

A control program will include aspects of a specific, detailed and technical nature. The individual circumstances in each situation demand different approaches. Because of this, it would be inappropriate for this document to attempt to outline a control program for your firm.

However, if you have reached the conclusion that further advice is needed to complete your assessment or that a control program is required but you do not know where to start, call our office for consultation on these matters or see our website with information about your nearest IAPA regional office:

Toll free: 1-800-406-IAPA(4272)

www.iapa.ca

Guidelines For Worksheet 1: Is The Designated Substance Present?

QUESTION 1: Review all the material safety data sheets (MSDSs) received from your suppliers. If a material contains the designated substance, it will be listed in the Hazardous Ingredients Section of the MSDS.

QUESTION 2: Familiarize yourself with the uses of the substance in your workplace. Consider all activities in which it is used. The DIRECT heading refers to any activity or process that involves production of goods; INDIRECT relates to activities/functions that are supportive to production, e.g. equipment maintenance.

Include in this list any process or activity that requires further investigation to determine whether or not the substance is present.

CONCLUSIONS: If you have identified all locations where the substance is present, proceed to Worksheet 2: Is worker exposure likely?

Guidelines For Worksheet 2: Is Worker Exposure Likely?

QUESTION 1: Indicate the form in which the substance is received in the plant e.g. as a liquid, solid, gas or powder. What is the type or title of the product in which the substance is found? Indicate also how it enters the plant, e.g. in sealed metal containers, loose, in bags, etc., and the size of the containers.

QUESTION 2: Consider what happens to the substance after it enters the plant; whether its state is altered in any way during use: whether it is cut or ground, melted or heated, mixed with other substances, sprayed.

As a result of the above action, what form of the substance, is produced (i.e. gas, fume, vapor, liquid, dust)?

QUESTION 3: Is there the possibility of escape into the working environment? Consider the adequacy of any existing engineering controls, possible breakdowns, leaks, spills, etc.

When considering stages at which contamination might occur, bear in mind: work clothing, eating practices, maintenance work, construction work, storage and dispensing, waste disposal and cleaning work.

QUESTION 4: This number need only be an estimate at this stage. However, consider workers in the immediate vicinity as well as those actually involved with the activity.

QUESTION 5: Knowing the form in which the substance enters the plant as well as how it is **altered during the process** will help you decide if a worker is likely to be exposed. Note that there may be several possible routes of entry – e.g. lead dust generated during grinding may be inhaled or ingested.

QUESTION 6: If the substance is used only in a totally enclosed process (e.g. a pipe line), consider whether exposure is likely to occur if there is a breakdown, or during maintenance or repair work. Note that this pipeline forms part of your control and must be suitably maintained to be effective.

CONCLUSIONS: If the conclusion reached is that there is no possibility of exposure, no written assessment is required. However if operations or processes change, the situation must be reviewed.

Guidelines For Worksheet 3: Process Description

The purpose of this worksheet is to identify the type and number of workers who may be exposed to the substance because of the nature of their job tasks in relation to the process. Do not forget to consider indirect process-related tasks, such as cleaning, maintenance and warehousing.

Process Flow: Identify the stages of the process where the designated substance is used or present.

The purpose of the process flow is to help you identify the various stages of a process or activity at which the substance is present, and what happens to it at each stage.

The process flow should start with the stage at which the substance first enters the plant or process, and end where it leaves the plant as a finished product or waste. The process flow should include all stages: storage, dispensing, transportation, clean up, waste disposal, and final shipment.

If you have several processes involving the substance, develop separate process flows for each. If the substance is used or present only during maintenance or cleaning, treat this as a distinct process and develop a simple process flow for it.

Description of task with likelihood of exposure: Describe the work task for each stage in the process flow where the designated substance is present.

Include details on the form of the designated substance (liquid, gas, solid, powder), how it is used, handled and stored, waste or by-products generated and any special conditions present.

Indicate if there is a likelihood of exposure during the task based on the work performed and the how the substance is used. Consider factors such as if the exposure is likely to exceed maximum concentrations or if personal protective equipment the primary control method used. Observe the work task during your walk through survey in Worksheet 8 to verify if there is a likelihood of exposure.

Frequency of Exposure: Indicate the approximate number of hours each week that the workers may be exposed to the designated substance due to the tasks performed. Where the task is of a special nature or performed irregularly make note of this.

Guidelines For Worksheet 3: Process Description (cont'd.)

Total Number of Employees Exposed: Indicate the number of workers and the job title(s) of the workers that may be exposed to the designated substance. Do not forget to consider workers not actually directly involved with the process but working in the immediate vicinity. This can be verified during the walk through survey in Worksheet 8.

Example:

Process Flow	Description of task with likelihood of exposure	Frequency of Exposure Hours per week	Total number of employees exposed:
DISPENSING	Dispense substance (dry powder) from a 45-liter (10 gal.) drum into small bags using hand shovels. As the powder may become airborne and workers are in close proximity to the substance without personal protective equipment there is a likelihood of an exposure.	The task is performed only in the day shift for about 1 hour. Total: 5 hours (Once per day for five days)	3 Material Handlers (direct contact) 2 Packagers (indirect contact but in immediate vicinity)

In order to complete this section, decisions and judgments must be made by competent and qualified personnel.

The purpose of this worksheet is to summarize information about any existing controls in the workplace that relate to the substance. You may wish to use separate sheets for different process stages. In addition, in the “Recommendations” column describe any other controls that may be considered at each of the process stages identified in the worksheet. The controls to be considered are summarized below:

CONTROL DESCRIPTION

Engineering Controls: Describe here any provisions for isolation or enclosing the process so as to avoid release of the substance into the working environment. Describe also the general ventilation system and any local exhaust hoods. Describe briefly the maintenance procedure for any type of engineering control.

For each control, note the location in the plant. In the right hand column of the worksheet note any problems that you know about at this stage and any recommendations you may have for improvement. It may also be useful at this stage to obtain and attach to the worksheet any diagrams of your control systems. These may be available from equipment manufacturers through your purchasing department. Engineering or maintenance personnel also may be able to provide these.

In considering engineering controls, you will want to pay particular attention to any steps in the process flow that have identified that an exposure is possible.

Guidelines For Worksheet 3: Process Description (cont'd.)

Work Practices: Describe briefly here any work practices that apply to the process steps involving exposure to the substance. Such work practices include safe handling procedures for use of the substance, dispensing, clean up and storage. Do not forget to include indirect operations such as maintenance, building repair work, etc.

Note whether these work practices are written down; whether they are reviewed from time to time.

Hygiene Facilities and Practices: Describe present practices and instructions with regard to wearing and cleaning of work clothes, washing and showering facilities, eating facilities and practices. Describe these facilities and indicate their location with respect to the process.

Training/Information: Describe any arrangement you have for training new and existing employees about the nature of the potential hazard and possible health effects, personal protective equipment (if required), methods of safe handling and storage, proper use of control equipment and training in emergency procedures and hygiene practices. Note whether there are labeling procedures and whether warning signs are used in relation to the substance. Attach pertinent training information if available.

Emergency Procedures/Equipment: Is there a written procedure for handling an emergency such as a spill, fire etc., involving the substance? Attach pertinent procedures.

What equipment is available for such emergencies – e.g. respirators, eyewash fountains, showers, and first aid?

Personal Protective Equipment: Describe any protective equipment supplied for use by workers at any stage of the process, indicating when and where used.

Describe briefly the instructions and practices regarding fitting, cleaning and maintenance. You may wish to obtain and review manufacturer's information about the equipment. Attach any training material that is pertinent.

Recommendations: Describe any recommendations to existing control measures or for implementation of new control measures. Verify if the recommendations are feasible during your walk through survey.

Guidelines For Worksheet 4: Walk Through

Evidence of Contamination: *Look for:*

- > Evidence of dust on surfaces, in the air, on worker's clothing, face, hands
- > Vapours or fumes
- > Evidence of leaks or spills

Record any of the above, noting location.

Hygiene Facilities and Work Practices: *Look at:*

- > Eating Practices
- > Washing facilities and practices
- > Adherence to safe handling/use practices
- > Workers'/supervisors' knowledge of handling procedures and required precautions
- > Workers' direct physical contact with the substance, if any
- > How trained/proper use of control equipment

Ventilation Systems: *Check:*

- > Conditions/cleanliness of air outlets and inlets
- > Proper location
- > Location of local exhaust hoods
- > Proper maintenance
- > Rated capacity suited to the task
- > Actual capacity of operating system

You may need the assistance of a person trained to evaluate ventilation systems.

Storage Facilities: *Check:*

- > Method of substance storage: e.g. open or sealed containers, protected from damage
- > Possibility of personnel in storage area coming into direct contact with the substance
- > Observation of correct fire; explosion precautions
- > Adequate ventilation and/or any other special procedures followed in storage area
- > Method of transferring material
- > Control procedures in obtaining material from storage
- > Breaks, leaks from containers

Guidelines For Worksheet 4: Walk Through (cont'd.)

Procedures: *Check:*

- > How the substance is being dispensed
- > Possibility of escape during dispensing
- > Any existing controls at dispensing stage
- > Method of cleaning dispensing containers
- > Type of container into which substance dispensed
- > Evidence of spill or leak during dispensing

Housekeeping: *Check:*

- > How normal cleaning is done – e.g. wetting down, special vacuums
- > Describe any special procedures and note correct type of equipment
- > Any evidence of compressed air used for cleaning work surfaces, floors, clothing
- > How waste is collected disposed
- > Eating rooms, washrooms for evidence of regular cleaning

Personal Protective Equipment: *Check:*

- > Type of P.P.E and manufacturer
- > How supplied
- > Appropriate for its use/used properly
- > Complaints about fit. Evidence of poor fit
- > Cleanliness and condition
- > Training in use, limitations and maintenance of P.P.E.

Emergency Facilities/Procedures: *Look for:*

- > Procedure for dealing with spills and leaks
- > Availability of appropriate clean-up equipment
- > Readily available emergency protective equipment
- > Emergency plan and how communicated to workers/supervisors (include evacuation procedures)
- > First aid facilities/equipment

Guidelines For Worksheet 5: Walk Through Conclusions

From your walk through observations recorded on Worksheet 8, now identify and compile any concerns you have in controlling the substance and, consequently, with worker exposure to it. Worksheet 9 also offers the opportunity to identify where further information may be needed regarding worker exposure and consequent effects on health.

QUESTIONS 1. (a), (b): Determine if there were any problem areas where installation of a control or upgrading of current ones is required.

QUESTIONS 2. (a), (b): Personal exposure monitoring will determine the magnitude of worker exposure and help determine the effectiveness of existing controls.

Note: Repetition of this monitoring will be necessary after adjustments of existing controls or following the establishment of new ones. This will confirm that substance concentrations are within the acceptable limits.

QUESTION 3: Medical testing will reveal the presence of certain substances in the exposed workers' blood or urine and any adverse health effects. If YES to 1(a) above, you will want to do such testing on workers in those areas. Consult the Code for Medical Surveillance for the substance being assessed to determine the appropriate test required.

Guidelines For Worksheet 6: Is A Control Program Necessary?

CONCLUSION I: (NO WORKER'S HEALTH MAY BE AFFECTED) You are likely to reach this conclusion if:

- > The substance is present in the working environment, but, because of the amount used or the physical state in which it is present, it is not possible for a worker's health to be affected by exposure; or workers are exposed and there are some engineering controls; however, the health of a worker is not likely to be affected because the risk to health would be minimal even if the engineering controls failed.

If you reach this decision, note that the position must be reviewed in the event of a change in the process or use of the substance.

Give your reasons briefly on the worksheet if you, do reach this conclusion.

CONCLUSION II: (A WORKER'S HEALTH MAY BE AFFECTED) Factors that are involved in reaching this conclusion include:

- > No controls in place
- > Current controls adequate but may fail or deteriorate
- > Existing controls in themselves are not adequate
- > Occupational exposure monitoring results that indicate potential exposure of workers
- > Reported health effects

Note why you have reached this conclusion.

Attach to this worksheet the results of any tests or professional reports you may have obtained that support your conclusion.

OVERALL CONCLUSION: A control program is necessary if you have reached Conclusion II. Note any improvements that are needed in your existing control program. For example, where failure of engineering controls could result in exposures that may affect health, the control program must ensure the maintenance and effectiveness of these controls.

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