



FEDERAL SUBSIDIARY LEGISLATION

**FACTORIES AND MACHINERY ACT 1967 [ACT 139]
P.U. (A) 60/1984
FACTORIES AND MACHINERY (LEAD) REGULATIONS 1984**

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Preamble

IN exercise of the powers conferred by section 56 (1) of the Factories and Machinery Act 1967 [Act 139], the Minister makes the following regulations:

PART I PRELIMINARY

1. Citation and commencement.

These Regulations may be cited as the **Factories and Machinery (Lead) Regulations 1984** and shall come into force on the 1st March 1984.

2. Interpretation.

In these Regulations unless the context otherwise requires—

"action level" means employee exposure, without regard to the use of respirator, to an airborne concentration of lead of seventy-five micrograms per cubic meter of air ($75 \mu\text{gm}/\text{m}^3$) averaged over an eight-hour period;

"approved" means approved in writing by the Chief Inspector;

"buffing" means grinding, sanding or smoothing with the aid of mechanical power, of lead, or of any substance containing lead, by means of abrasive material or a wheel;

"lead" means metallic lead, all inorganic lead compounds, and organic lead soaps, but excludes all other organic lead compounds;

"lead burning" means the melting of lead by any oxygen gas flame or otherwise for the purpose of inducing the metal to flow;

"lead process" means any manufacturing process involving the use or handling of lead, and without affecting the generality of the foregoing definition includes :

(a) the smelting of ores containing lead;

(b) lead burning;

(c) the melting or casting of lead;

(d) buffing; and

(e) the manipulation, movement or other treatment of lead in particulate or molten form;

"personal samples" means samples collected in the breathing zone of an employee by means of a sampling device directly attached to the employee and worn continuously during all work and rest operations;

"registered medical practitioner" means a medical practitioner who is registered with the Malaysian Medical Council;

"time-weighted-average concentration" means average concentration over a specified period of time;

3. Application.

(1) These Regulations shall apply to all factories in which any lead process is used, but do not apply to any building operations or works of engineering construction.

(2) The provisions of these Regulations shall be in addition to and not in substitution for or in diminution of other requirements imposed by or under the Factories and Machinery Act 1967.

4. Obligation.

(1) It is the duty of every employer who is engaged in any lead process to comply with these Regulations in relation to any person employed by him in any plant or material under his control, in any factory or part of a factory.

(2) It is the duty of each employee to comply with these Regulations.

PART II PERMISSIBLE EXPOSURE LIMIT

5. Permissible Exposure Limit (PEL).

The employer shall ensure that no employee is exposed to lead at concentrations greater than one hundred and fifty micrograms per cubic meter of air ($150 \mu\text{gm}/\text{m}^3$) averaged over an eight-hour period (hereinafter referred to as "the PEL").

6. PEL for exposure greater than eight hours.

If an employee is exposed to lead for more than eight hours in any work day, the Permissible Exposure Limit or PEL, as a Time-Weighted-Average (TWA) for that day, shall be reduced according to the following formula:

$$\text{Permissible limit in } \mu\text{gm}/\text{m}^3 \text{ for the day} = \frac{1200}{\text{hours worked in the day.}}$$

7. PEL when using respirators.

When respirators are used to supplement engineering and work practice controls to comply with the PEL and all provisions of these Regulations have been met, employee exposure, for the purpose of determining whether the employer has complied with the PEL, may be considered to be at the level provided by the protection factor of the respirator for those periods the respirator is worn. These periods

may be averaged with exposure levels during periods when respirators are not worn to determine the employee's daily TWA exposure.

PART III EXPOSURE MONITORING

8. General.

(1) For the purpose of this Part, employee exposure is the exposure which would occur if the employee is not using a respirator.

(2) Every employer who has a workplace or work operation covered by these Regulations shall conduct employee exposure monitoring to determine if any employee may be exposed to lead at or above the action level.

(3) For the purpose of paragraph (2), the employer shall collect full shift (for at least seven continuous hours) personal samples including at least one sample for each shift for each job classification in each work area.

(4) Full shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.

9. Basis for initial determination.

(1) The employer shall base initial determinations of employee exposure on the employee exposure monitoring results and any of the following relevant considerations:

(a) any information, observations, or calculations which would indicate employee exposure to lead;

(b) measurements of airborne lead made in the preceding year if the sampling and analytical methods used meet the accuracy and confidence levels of regulation 15;

(c) any employee's complaints of symptoms which may be attributable to exposure to lead.

(2) Monitoring for the initial determination may be limited to a representative sample of the exposed employee who the employer reasonably believes is exposed to the greatest airborne concentration of lead in the workplace

10. Positive initial determination.

Where an initial determination of employee exposure based on a representative sample of an employee as provided in regulation 9 shows the possibility of any employee exposure to lead at or above the action level, the employer shall conduct employee exposure monitoring which is representative of the exposure for each and every employee engaged in the workplace which is exposed to lead.

11. Negative initial determination.

Where an initial determination of employee exposure conducted under regulation 9 shows that no employee is exposed to airborne concentrations of lead at or above the action level, the employer shall make a written record of such determination. The record shall include at least the information specified in regulation 9 and shall also include the date of determination, location within the worksite, and the name, identity card number and social security number, if any, of each employee monitored.

12. Frequency.

(1) If the employee exposure monitoring conducted under regulation 10 reveals employee exposure to be below the action level the monitoring need not be repeated except as otherwise provided in regulation 13.

(2) If the initial determination of employee exposure under regulation 9 or subsequent employee exposure monitoring under regulation 10 reveals employee exposure to be at or above the action level but below the PEL the employer shall repeat monitoring in accordance with this Part at least every six months. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart, are below the action level at which time the employer may discontinue monitoring for that employee except as otherwise provided in regulation 13.

(3) If the employee exposure monitoring conducted under regulation 10 reveals that employee exposure is above the PEL the employer shall repeat monitoring quarterly. The employer shall continue monitoring at the required frequency until at least two consecutive measurements, taken at least seven days apart are below the PEL but at or above the action level at which time the employer may repeat monitoring for that employee at the frequency specified in paragraph (2).

13. Additional monitoring.

Whenever there has been a production, process, control or personnel change which may result in new or additional exposure to lead, or whenever the employer has any other reason to suspect a change which may result in new or additional exposures to lead, additional monitoring in accordance with this part shall be conducted.

14. Employee notification.

(1) Within five working days after the receipt of employee exposure monitoring results, the employer shall notify each employee in writing of the results which represent the employee's exposure.

(2) Whenever the results indicate that the representative employee exposure, without regard to the use of respirator, exceeds the PEL, the employer shall include in the written notice a statement that the PEL was exceeded and a description of the corrective action taken or to be taken to reduce exposure to or below the PEL.

15. Accuracy of measurement.

The employer shall use a method of monitoring and analysis which has an accuracy, to a confidence level of 95%, within a margin of plus or minus 20% for airborne concentrations of lead equal to or greater than seventy-five micrograms per cubic meter ($75 \mu\text{gm}/\text{m}^3$).

PART IV METHODS OF COMPLIANCE

16. Engineering and work practice controls.

The employer shall implement engineering and work practice controls (including administrative controls) to reduce and maintain employee exposure to lead below the PEL.

17. Respiratory protection.

Where engineering and work practice controls do not reduce employee exposure to or below the PEL, the employer shall supplement these controls with respirators in accordance with Part V of these Regulations.

18. Mechanical ventilation and recirculation of air.

(1) When ventilation is used to control exposure, measurements which demonstrate the effectiveness of the system in controlling exposure, such as capture velocity, duct velocity, or static pressure shall be made at least every three months. Measurements of the system effectiveness in controlling exposure shall be made within five days of any change in production, process, or control which might result in a change in employee exposure to lead.

(2) If air from exhaust ventilation is re-circulated into the workplace, the employer shall ensure that the recirculation system has a high efficiency filter with reliable back-up filters, and controls to monitor the concentration of lead in the return air and to bypass the recirculation system automatically if it fails, are installed, operating and maintained.

19. Administrative control.

If administrative controls are used as a means of reducing employee's TWA exposure to lead, the employer shall establish and implement a job rotation schedule which includes:

- (a) name, identity card number and social security number, if any, of each affected employee;
- (b) duration and exposure levels at each job or work station where each affected employee is located; and
- (c) any other information which may be useful in assessing the reliability of administrative controls to reduce exposure to lead.

**PART V
RESPIRATORY PROTECTION**

20. General.

Where the use of respirator is required under this Part, the employer shall provide, at no cost to the employee, and ensure the use of respirators which comply with the requirements of this Part. Respirators shall be used in the following circumstances:

(a) during the time period necessary to install or implement engineering or work practice controls; and

(b) in work situations in which engineering and work practice controls are not sufficient to reduce exposures to or below the PEL.

21. Respirator selection.

(1) Where respirators are required under this Part the employer shall provide the appropriate respirators specified in the table in the Schedule.

(2) Notwithstanding paragraph (1), the employer shall provide a powered, air purifying respirator in lieu of the respirator specified in the table in the Schedule whenever it is required by the Chief Inspector.

(3) The employer shall select respirators from among those approved for protection against lead dust, fume and mist by the Chief Inspector.

22. Respirator usage.

(1) The employer shall ensure that the respirator issued to the employee exhibits minimum face-piece leakage and that the respirator is fitted properly.

(2) If an employee exhibits difficulty in breathing during use, the employer shall make available to the employee an examination in accordance with regulation 38 (c) to determine whether the employee can wear a respirator while performing the required duty.

23. Respirator programme.

(1) The employer shall initiate a respiratory protection programme.

(2) The employer shall permit each employee who uses a filter respirator to change the filter elements whenever an increase in breathing resistance is detected and shall maintain an adequate supply of filter elements for this purpose.

**PART VI
PROTECTIVE WORK CLOTHING AND EQUIPMENT**

24. Provision and use.

If an employee is exposed to lead above the PEL without regard to the use of respirators or where the possibility of skin or eye irritation exists, the employer shall provide at no cost to the employee and ensure that the employee uses appropriate protective work clothing and equipment such as, but not limited to:

- (a) coveralls or similar full-body work clothing;
- (b) gloves, hats and shoes or disposable shoe coverlets; and
- (c) face shield, vented goggles, or other appropriate protective equipments approved by the Chief Inspector.

25. Cleaning and replacement.

(1) The employer shall provide the protection clothing required in regulation 24 in a clean and dry condition at least weekly, and daily to employee whose exposure levels without regard to the use of a respirator are over three hundred microgram per cubic meter ($300 \mu\text{gm}/\text{m}^3$) of lead as an eight-hour TWA.

(2) The employer shall provide for the cleaning, laundering, or disposal of protective clothing and equipment required by regulation 24.

(3) The employer shall repair or replace required protective clothing and equipment as needed to maintain their effectiveness.

(4) The employer shall ensure that all protective clothing is removed at the completion of a work shift only in change rooms provided for that purpose as prescribed in regulation 30.

(5) The employer shall ensure that contaminated protective clothing which is to be cleaned, laundered, or disposed of, is placed in a closed container in the change room which prevents dispersion of lead outside the container.

(6) The employer shall inform in writing any person who cleans or launders protective clothing or equipment of the potentially harmful effects of exposure to lead.

(7) The employer shall ensure that the containers of contaminated protective clothing and equipment required by regulation 25 (5) are labelled as follows:

CAUTION:

**CLOTHING CONTAMINATED WITH LEAD. DO NOT REMOVE DUST BY BLOWING
OR SHAKING. DISPOSE OF LEAD CONTAMINATED WASH WATER IN
ACCORDANCE WITH GOVERNMENT REGULATIONS.**

(8) The employer shall prohibit the removal of lead from protective clothing or equipment by blowing, shaking, or any other means which disperses lead into the air.

PART VII HOUSEKEEPING

26. Surfaces.

All surfaces in factories which are subject to these Regulations shall be maintained as free as practicable from accumulations of lead.

27. Cleaning floors.

(1) Floors and other surfaces where lead accumulates shall not be cleaned by the use of compressed air.

(2) Shoveling, dry or wet sweeping and brushing may be used only where vacuuming has been tried and found not to be effective.

28. Vacuuming.

Where vacuuming methods are selected, the vacuum shall be used and emptied in a manner which minimises the re-entry of lead into workplaces.

PART VIII HYGIENE FACILITIES AND PRACTICES

29. General.

The employer shall ensure that in areas where skin or clothing may come in contact with fume, dust, mist or liquids containing lead, food or beverage is not present or consumed, tobacco products are not present or used, and cosmetics are not applied except in change rooms, showers and lunch rooms required under regulations 30, 31 and 32 respectively.

30. Change rooms.

(1) The employer shall provide clean change rooms for employees who work in areas where their skin or clothing comes in contact with fume, dust, mist, or liquids containing lead or where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(2) The employer shall ensure that change rooms are equipped with separate storage facilities for protective work clothing and equipment and for street clothes which prevent cross-contamination.

31. Showers.

(1) The employer shall ensure that employee who work in areas where their skin or clothing comes into contact with fume, dust, mist, or liquids containing lead or where their airborne exposure to lead is above the PEL, without regard to the use of respirators, shower at the end of the work shift.

(2)The employer shall provide shower facilities to his employees.

(3) The employer shall ensure that employees who are required to shower pursuant to paragraph (1) do not leave the workplace wearing any clothing or equipment worn during the work shift.

32. Lunch rooms.

(1) The employer shall provide lunch room facilities for employees who work in areas where their skin or clothing comes into contact with fume, dust, mist, or liquids containing lead or where their airborne exposure to lead is above the PEL, without regard to the use of respirators.

(2) The employer shall ensure that the lunch room facilities are isolated from lead process and are readily accessible to employees.

(3) The employer shall ensure that employees who work in areas where their skin or clothing comes into contact with fume, dust, mist, or liquids containing lead or where their airborne exposure to lead is above the PEL without regard to a respirator wash their hands and face prior to eating, drinking, smoking or applying cosmetics.

(4) The employer shall ensure that employees do not enter lunch room facilities with protective work clothing or equipment unless surface lead dust has been removed by vacuuming, down draft booth, or other cleaning method.

PART IX MEDICAL SURVEILLANCE

33. General.

(1) The employer shall institute a medical surveillance programme for all employees who are or may be exposed above the action level for more than thirty days per year.

(2) The employer shall ensure that all medical examinations and procedures are performed by or under the supervision of a registered medical practitioner.

(3) The employer shall provide the required medical surveillance without cost to employees and at a reasonable time and place.

34. Biological monitoring of blood lead sampling and analysis.

The employer shall make available biological monitoring in the form of blood sampling and analysis for lead level to each employee covered under regulation 33 (1) on the following schedule:

- (a) at least every six months to each employee covered under regulation 33 (1);
- (b) at least every three months for each employee whose last blood sampling analysis indicated a blood lead level at or above 40 $\mu\text{gm}/100$ gm of whole blood but less than 60 $\mu\text{gm}/100$ gm of whole blood. This frequency shall continue until two consecutive blood samples and analysis indicate a blood lead level below 40 $\mu\text{gm}/100$ gm of whole blood;
- (c) at least monthly for each employee whose last blood sampling analysis indicated a blood lead level at or above 60 $\mu\text{gm}/100$ gm of whole blood. This frequency shall continue until two consecutive blood samples and analysis indicate a blood lead level below 60 $\mu\text{gm}/100$ gm of whole blood but at or above 40 $\mu\text{gm}/100$ gm of whole blood at which the frequency shall be as specified in paragraph (b);
- (d) at least monthly during the removal period of each employee removed from exposure to lead due to an elevated blood lead level as provided in regulation 41;
- (e) at least monthly for a female employee of child-bearing capacity

35. Follow-up blood sampling test.

Whenever the result of a blood lead level test indicate that an employee's blood lead level exceeds the numerical criterion for medical removal under regulation 41, the employer shall provide a second follow-up blood sampling test within two weeks after the employer receives the results of the first blood sampling test.

36. Accuracy of analysis.

Blood lead level sampling and analysis provided pursuant to this Part shall have an accuracy to a confidence level of 95 per cent, within a margin of plus or minus 15% or 6 $\text{mgm}/100$ gm, which ever is greater, and shall be conducted by an approved laboratory.

37. Employee notification.

Within five working days after the receipt of biological monitoring results, the employer shall notify in writing each employee whose blood lead level exceeds 40 $\mu\text{gm}/100$ gm of that employee's blood lead level and that these Regulations require temporary medical removal when an employee's blood lead level exceeds the numerical criterion for medical removal under regulation 41.

38. Medical examination frequency.

The employer shall make available medical examinations and consultations to each employee covered under regulation 33 (1) on the following schedule:

(a) at least annually for each employee for whom a blood sampling test conducted at any time during the preceding twelve months indicate a blood lead level at or above 40 $\mu\text{gm}/100\text{ gm}$;

(b) prior to assignment for each employee being assigned for the first time to an area in which airborne concentrations of lead are at or above the action level;

(c) as soon as possible, upon notification by an employee either that the employee has developed signs or symptoms commonly associated with lead intoxication, that the employee desires medical advice concerning the effects of current or past exposure to lead on the employee's ability to procreate a healthy child, or that the employee has demonstrated difficulty in breathing during a respirator fitting test or while using a respirator.

(d) as medically appropriate for each employee removed from exposure to lead due to a risk of sustaining material impairment to health.

39. Content of medical examination.

Medical examinations made available pursuant to paragraphs (a) to (c) of regulation 38 shall include the following elements:

(a) a detailed work history and medical history, with particular attention to past lead exposure (occupational and non-occupational), personal habits (smoking, hygiene) and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems;

(b) a thorough physical examination with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used;

(c) a blood pressure measurement;

(d) a blood sample and analysis which determines :

(i) blood lead level;

(ii) haemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology;

(iii) blood urea nitrogen; and

(iv) serum creatinine;

(e) a routine urinalysis with microscopic examination; and

(f) any laboratory or other test which the examining registered medical practitioner deems necessary by sound medical practice.

The content of medical examinations made available pursuant to paragraph (d) of regulation 38 shall be determined by a registered medical practitioner and, if requested by an employee, shall include pregnancy testing.

40. Chelation.

(1) The employer shall ensure that any person whom he retains, employs, supervises, or controls does not engage in prophylactic chelation of any employee at any time.

(2) If therapeutic or diagnostic chelation is to be performed by any person in paragraph (1) the employer shall ensure that it be done under the supervision of a registered medical practitioner in a clinical setting with thorough and appropriate medical monitoring and that the employee is notified in writing prior to its occurrence.

PART X MEDICAL REMOVAL PROTECTION

41. Temporary removal due to elevated blood lead levels.

The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that—

(a) a periodic and a follow-up blood sampling test conducted pursuant to these Regulations indicate that the employee's blood lead level is at or above 80 μ gm/100 gm of whole blood; or

(b) the average of the last three blood sampling tests conducted (or the average of all blood sampling tests conducted over the previous six months, whichever is longer) indicates that the employee's blood lead level is at or above 73 μ gm/100 gm of whole blood, provided, however, that an employee need not be removed if the last blood sampling test indicates a blood lead level at or below 60 μ gm/100 gm of whole blood; or

(c) a periodic and follow-up blood sampling test of a female employee of a child-bearing capacity indicate that the employee's blood lead level is at or above 40 μ gm/100 gm of whole blood.

42. Temporary removal due to medical determination.

The employer shall remove an employee from work having an exposure to lead at or above the action level on each occasion that the results of a medical finding, determination, or opinion show that the employee has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

43. Temporary removal due to pregnancy.

The employer shall after being notified of the fact remove a pregnant employee and a breast-feeding employee from work which may expose the said employee to lead.

44. Return of employee to former job status.

The employer shall return an employee to his or her former job status:

(a) for an employee removed in accordance with regulation 41 (a) and (b), when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 60 μ gm/100 gm of whole blood;

(b) for an employee removed in accordance with regulation 41 (c), when two consecutive blood sampling tests indicate that the employee's blood lead level is at or below 40 μ gm/100 gm of whole blood;

(c) for an employee removed in accordance with regulation 42, when a subsequent final medical determination results in a medical finding, determination, or opinion that the employee no longer has a detected medical condition which places the employee at increased risk of material impairment to health from exposure to lead.

45. Removal of employee special protective measure or limitations.

The employer shall remove any limitations placed on an employee or end any special protective measures provided to an employee pursuant to a medical determination when a subsequent final medical determination indicates that the limitations or special protective measures are no longer necessary.

PART XI EMPLOYEE INFORMATION AND TRAINING

46. Training programme.

(1) The employer shall institute a training programme for and ensure the participation of all employees who are subjected to exposure to lead at or above the action level or for whom the possibility of skin or eye irritation exists.

(2) The employer shall ensure that during the training programme, each employee is informed of the following:

(a) the contents of these Regulations, and the employees' rights;

(b) the specific nature of the operations which could result in exposure to lead above the action level;

(c) the purpose, proper selection, fitting, use and limitations of respirators;

(d) the purpose and description of the medical surveillance programme, and the medical removal protection programme including information concerning the adverse health effects associated with excessive exposure to lead, with particular attention to the adverse reproductive effects on both males and females;

(e) the engineering controls and work practices associated with the employee's job assignment; and

(f) instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a registered medical practitioner.

(3) The training programme shall be repeated at least annually for each employee removed in accordance with regulation 41.

47. Access to information.

(1) The employer shall make readily available to all affected employees a copy of these Regulations.

(2) The employer shall provide, upon request, all materials relating to the employee information and training programme to the Chief Inspector.

PART XII SIGNS

48. Signs.

(1) The employer shall post the following warning signs in each work area where lead is used:

WARNING
LEAD WORK AREA
POISON
NO SMOKING OR EATING

(2) The employer shall ensure that the signs required by these Regulations are illuminated and cleaned as necessary so that the legend is readily visible

PART XIII RECORD KEEPING

49. Exposure monitoring record.

(1) The employer shall establish and maintain an accurate record of all monitoring required in Part III of these Regulations.

(2) The record kept shall be as stipulated by the Chief Inspector.

(3) The employer shall maintain these monitoring records for at least two years.

50. Medical surveillance.

(1) The employer shall establish and maintain an accurate record for each employee subject to medical surveillance under Part IX of these Regulations. The record shall include the following:

(a) the name, identity card number, social security number, if any, and description of the duties of the employee;

(b) a copy of the registered medical practitioner's written opinion;

(c) results of biological monitoring;

(d) results of any airborne exposure monitoring done for the employee; and

(e) any employee medical complaints related to exposure to lead.

(2) The examining registered medical practitioner shall establish and maintain an accurate record for each employee subject to medical surveillance under Part IX of these Regulations. The record shall include the following:

(a) a copy of the medical examination results including medical and work history required under these Regulations;

(b) a description of the laboratory procedures and a copy of any standards or guidelines used to interpret the test results or references to that information; and

(c) a copy of the results of biological monitoring.

(3) All records pursuant to regulation 50 (1) and (2) shall be maintained for as long as the employee is being employed and shall be transmitted to the Chief Inspector within three months after termination of the employee's employment.

51. Medical removal.

(1) The employer shall establish and maintain an accurate record for each employee removed from current exposure to lead pursuant to these Regulations.

(2) The record shall include the following:

(a) the name, identity card number, and social security number, if any, of each employee monitored;

(b) the date on each occasion that the employee was removed from current exposure to lead as well as the corresponding date on which the employee was returned to his or her former job status;

(c) a brief explanation of how each removal was or is being accomplished; and

(d) a statement with respect to each removal indicating whether or not the reason for the removal was on elevated blood lead level.

(3) The employer shall maintain each medical removal record for at least the duration of an employee's employment.

52. Availability of record.

The employer shall make available upon request all records required to be maintained by these Regulations to the Chief Inspector for examination and copying.

53. Transfer of record.

(1) Whenever the employer ceases to do business, the successor employer shall receive and retain all records required to be maintained under these Regulations.

(2) Whenever the employer ceases to do business and there is no successor employer to receive and retain the records required to be maintained under these Regulations, these records shall be transmitted to the Chief Inspector.

(3) At the expiration of the retention period for the records required to be maintained under regulations 49 and 51, the employer shall notify the Chief Inspector at least three months prior to the disposal of such records and shall transmit those records to the Chief Inspector if requested within that period.

PART XIV MISCELLANEOUS

54. Penalties.

Any person who contravenes any provision of these Regulations shall be guilty of an offence and shall, on conviction, be liable to a fine not exceeding two thousand ringgit.

SCHEDULE

(Regulation 21 (1))

RESPIRATORY PROTECTION AGAINST EXPOSURE TO LEAD

(1) <i>Airborne concentration of lead of condition of use</i>	(2) <i>Required respirator ⁽¹⁾</i>
Not in excess of 0.5 mg/m ³ (500 µg/m ³)	Half mask, air-purifying respirator equipped with high efficiency particulate filters ^{(2) (3)}
Not in excess of 2.5 mg/m ³ (2,500 µg/m ³)	Full facepiece, air-purifying respirator with high efficiency filters
Not in excess of 50 mg/m ³	(1) Any powered, air-purifying respirators with high efficiency filters; or (2) Half-mask supplied air- respirator operated in positive- pressure mode ⁽²⁾
Not in excess of 100 mg/m ³	Supplied-air respirators with full facepiece, hood, helmet, or suit, operated in positive-pressure mode
Greater than 100 mg/m ³ unknown concentration or fire- fighting	Full facepiece, self-contained breathing apparatus operated in positive-pressure mode

(1) Respirators specified for high concentrations can be used at lower concentrations of lead.

(2) Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentration.

(3) A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

Made the 26th January 1984.

[KB. Sulit 32/1/2/5/1/1 SJ. (1); PN.(PU²)235.]

DATO' MAK HON KAM,
Minister of Labour