



INSTITUT KESELAMATAN DAN KESIHATAN PEKERJAAN NEGARA  
*NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH*

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## **PEPERIKSAAN UNTUK JURUTEKNIK HIGIEN INDUSTRI 1**

*EXAMINATION FOR  
INDUSTRIAL HIGIEN TECHNICIAN 1*

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**BAHAGIAN II SEKSYEN A**  
*PART II SECTION A*

**TUGASAN TEMPAT KERJA**  
*WORKPLACE ASSIGNMENT*

## ARAHAN:

CALON DIKEHENDAKI MEMBACA ARAHAN DI BAWAH DENGAN TELITI DAN MENGIKUT SEMUA ARAHAN.

### A. TUGASAN TEMPAT KERJA

1. Pilih satu tempat kerja.
2. Lakukan tinjauan tapak.
3. Namakan semua bahagian / seksyen / unit kerja yang terdapat di tempat kerja tersebut.
4. Laksanakan pemantauan diri menggunakan persampelan berturutan jangkamasa penuh (*full period consecutive sampling*) untuk sekurang-kurangnya dua (2) jenis bahan kimia berbahaya kepada kesihatan dan sekurang-kurangnya dua (2) orang pekerja di tempat kerja tersebut dan bincangkan teknik pemilihan pekerja.
5. Sediakan laporan pemantauan mengikut format laporan yang dilampirkan.

### B. FORMAT LAPORAN

#### (i) Format Teks

1. Laporan tugas ini hendaklah disediakan dalam Bahasa Malaysia atau Bahasa Inggeris.
2. *Font* yang digunakan mestilah *Times New Roman* bersaiz 12 dengan langkau 2 baris.
3. Jidar (margin) kiri mestilah berukuran 4.0 sm, manakala jidar kanan, atas dan bawah mestilah berukuran 2.5 sm dan diformatkan kepada saiz kertas A4.
4. Gunakan sebelah halaman kertas sahaja.
5. Laporan mesti mempunyai muka depan (sila rujuk *Lampiran 1*).
6. Laporan mesti dijilidkan

#### (ii) Format Laporan dan Skema Pemarkahan

Laporan hendaklah mengandungi topik-topik berikut :

- |     |                                   |                    |
|-----|-----------------------------------|--------------------|
| 1.  | <b>RINGKASAN EKSEKUTIF</b>        | <b>(10 markah)</b> |
| 2.  | <b>PENGENALAN</b>                 | <b>(5 markah)</b>  |
| 3.  | <b>OBJEKTIF PEMONITORAN</b>       | <b>(5 markah)</b>  |
| 4.  | <b>KETERANGAN PROSES</b>          | <b>(5 markah)</b>  |
| 5.  | <b>KAEDAH</b>                     | <b>(15 markah)</b> |
| 6.  | <b>KEPUTUSAN PEMONITORAN DIRI</b> | <b>(20 markah)</b> |
| 7.  | <b>PERBINCANGAN</b>               | <b>(20 markah)</b> |
| 8.  | <b>CADANGAN</b>                   | <b>(10 markah)</b> |
| 9.  | <b>KESIMPULAN</b>                 | <b>(5 markah)</b>  |
| 10. | <b>LAMPIRAN</b>                   | <b>(5 markah)</b>  |

## 1. RINGKASAN EKSEKUTIF

- i) Tujuan
- ii) Aktiviti utama yang dijalankan oleh juruteknik higien
- iii) Kaedah
- iv) Ringkasan keputusan
- v) Kesimpulan dan cadangan

## 2. PENGENALAN

- i) Tarikh Pemonitoran
- ii) Kawasan Pemonitoran
- iii) Nama
- iv) Bilangan dan waktu syif bagi setiap spesifikasi kerja

## 3. OBJEKTIF PEMONITORAN

Menerangkan tujuan permonitoran dijalankan.

## 4. KETERANGAN PROSES

Keterangan mengenai proses semasa permonitoran dijalankan.

## 5. KAEDAH

- i) Kaedah yang digunakan
- ii) Peralatan yang digunakan
  - a) No siri pam
  - b) Jenis media
  - c) Penentukur
- iii) Cara pemilihan pekerja:  
Penerangan tentang kaedah pemilihan pekerja
- iv) Justifikasi jangka masa pemonitoran dan bilangan syif:  
Penerangan tentang kenapa sesuatu jangkamasa diambil untuk sesuatu permonitoran.

## 6. KEPUTUSAN PEMONITORAN DIRI

| Nama/<br>no.<br>sampel | No.<br>Sample<br>blank | Kawasan<br>Kerja | Spesifikasi<br>Kerja | Jangkamasa<br>Pemonitoran | Aras<br>Pendedahan | PEL | Ulasan<br>(bandingkan<br>dengan<br>PEL) |
|------------------------|------------------------|------------------|----------------------|---------------------------|--------------------|-----|---|
|                        |                        |                  |                      |                           |                    |     |   |

## 7. PERBINCANGAN

- i) Bincang keputusan yang diperolehi
- ii) Bincang faktor-faktor yang mempengaruhi keputusan  
(Kaedah kawalan kejuruteraan, kawalan pentadbiran)

## 8. CADANGAN

- i) Kaedah Pematuhan
  - a) Cara Kejuruteraan
  - b) Cara Pentadbiran
- ii) Pemakaian Kelengkapan Pelindung Diri
- iii) Pematuhan Peraturan
- iv) Pemonitoran Tambahan
- v) Cara-cara lain, jika ada  
(cadangan yang diberikan mestilah boleh membantu mengurangkan pendedahan atau meningkatkan lagi tahap keselamatan pekerja di tempat tersebut)

## 9. KESIMPULAN

- i) Pernyataan sama ada objektif tercapai/tidak

## 10. LAMPIRAN

- i) Carta alir proses
- ii) Salinan kaedah yang digunakan (Contoh: *NIOSH Method*)
- iii) Pelan Lakar dan Pemetaan :
  - a) Kedudukan Jentera
  - b) Kedudukan Pekerja

**Setiap perkara berikut WAJIB disertakan di dalam laporan**

- i) Borang pengesahan majikan bahawa persampelan telah dijalankan
- ii) Salinan sijil tentukur bagi peralatan yang digunakan (yang terkini)
- iii) Borang Data & Pengiraan
- iv) Salinan Sijil Analisa Makmal

C. **PENGESAHAN LAPORAN TUGASAN TEMPAT KERJA**

Sila lampirkan perakuan tugas tempat kerja (*Lampiran I*) bersama laporan tugas tempat kerja

D. **PENYERAHAN LAPORAN TUGASAN PEMONITORAN PENDEDAHAN BAHAN KIMIA**

1. Laporan lengkap tugas mestilah dihantar melalui **SERAHAN SEGERA/SURAT BERDAFTAR** atau **SERAHAN TANGAN** kepada alamat tersebut di bawah **sebelum atau pada TARIKH TUTUP PERMOHONAN**. Sila cetak "IHT1 dan nombor kad pengenalan" di sudut kiri atas sampul surat.

*Sekretariat Peperiksaan  
Bahagian Peperiksaan & Persijilan,  
Institut Keselamatan dan Kesihatan Pekerjaan Negara  
Lot 1, Jalan 15/1 Seksyen 15  
43650 Bandar Baru Bangi  
Selangor Darul Ehsan*

2. **PERINGATAN:** Laporan yang lewat diterima tidak akan dilayan.

E. **PEPERIKSAAN LISAN**

1. Peperiksaan Lisan adalah berdasarkan kepada **laporan tugas dan pengetahuan dalam bidang pemantauan pendedahan bahan kimia**. Anda dikehendaki membentangkan laporan seolah-olah anda membentangkannya kepada pihak syarikat. Pembentangan tersebut hendaklah merangkumi perkara-perkara seperti berikut:

- a) Tujuan pemantauan udara
- b) Penerangan tentang strategi persampelan
- c) Kaedah persampelan dan analisis
- d) Keputusan dan perbincangan
- e) Kesimpulan dan saranan

2. Pembentangan ini hendaklah disediakan dalam bentuk "*Microsoft Power Point*" (*versi 97 - 2003*).

3. Tempoh sesi pembentangan:
  - a) Pembentangan = 10 minit
  - b) Sesi soal jawab = 30 minit

F. **KEMAHIRAN PERSAMPELAN KIMIA**

NIOSH akan menyediakan peralatan untuk penilaian kemahiran persampelan kimia. Walaubagaimanapun anda boleh membawa peralatan sendiri. (Sekiranya perlu).

**INSTRUCTION:**

**CANDIDATES MUST READ THE FOLLOWING INSTRUCTIONS CAREFULLY AND FOLLOW ALL INSTRUCTIONS.**

**A. WORKPLACE ASSIGNMENT**

1. Choose one workplace.
2. Conduct a walk-through survey.
3. Name all the work division / sections / unit available at the workplace.
4. Conduct personal sampling using full period consecutive sampling for at least two (2) chemical hazardous to health and at least two (2) workers at the workplace and discuss selection of workers method.
5. Prepare a monitoring report based on the attached report format.

**B. FORMAT OF ASSIGNMENT REPORT****(i) Text Format**

1. This report of the assignment must be provided in either Bahasa Malaysia or English.
2. The font used must be Times New Roman size 12 and using double spacing.
3. The left and right margin must be 4.0cm, while the top and bottom margin must be 2.5cm and formatted in paper sized A4.
4. Use one side of the paper only.
5. The report must have a front cover (Please refer Appendix I)
6. The report must be bound.

**(ii) Report Format and Marking Scheme**

Report should include the following topics:

- |     |                                   |                   |
|-----|-----------------------------------|-------------------|
| 1.  | <b>EXECUTIVE SUMMARY</b>          | <b>(10 marks)</b> |
| 2.  | <b>INTRODUCTION</b>               | <b>(5 marks)</b>  |
| 3.  | <b>SAMPLING OBJECTIVE</b>         | <b>(5 marks)</b>  |
| 4.  | <b>PROCESS DESCRIPTIONS</b>       | <b>(5 marks)</b>  |
| 5.  | <b>METHODOLOGY</b>                | <b>(15 marks)</b> |
| 6.  | <b>PERSONAL MONITORING RESULT</b> | <b>(20 marks)</b> |
| 7.  | <b>DISCUSSION</b>                 | <b>(20 marks)</b> |
| 8.  | <b>RECOMMENDATION</b>             | <b>(10 marks)</b> |
| 9.  | <b>CONCLUSION</b>                 | <b>(5 marks)</b>  |
| 10. | <b>APPENDICES</b>                 | <b>(5 marks)</b>  |

## 1. EXECUTIVE SUMMARY

- i) Objective
- ii) Main activities carried out by hygiene technician
- iii) Methodology
- iv) Summary of findings
- v) Conclusion and recommendation

## 2. INTRODUCTION

- i) Date of Monitoring
- ii) Monitoring area
- iii) Name
- iv) Working hours & number of shift for each work specification.

## 3. SAMPLING OBJECTIVES

Explain the purpose of sampling that have been conducted

## 4. PROCESS DESCRIPTION

Description of sampling process that have been conducted

## 5. METHODOLOGY

- i) Method used
- ii) Equipment used
  - a) Sampling pump: serial no.
  - b) Collection media
  - c) Calibrator
- iii) Selection of workers  
(Description of workers selection method)
- iv) Justification of sampling duration & number of shift  
(Explanation of why certain duration is taken for monitoring)

## 6. PERSONAL MONITORING RESULT

| Name / Sample No. | Blank Sample | Working Area | Job Specification & Task | Sampling Duration | Exposure Level | PEL | Comparison with PEL |
|-------------------|--------------|--------------|--------------------------|-------------------|----------------|-----|---------------------|
|                   |              |              |                          |                   |                |     |                     |

## 7. DISCUSSION

- i) Based on finding
- ii) Factors contributing towards the results  
(Engineering Control , Administrative Control )

## 8. RECOMMENDATION

- i) Method Compliance
  - a) Engineering Control
  - b) Administrative Control
- ii) Used of Personal Protective Equipment
- iii) Regulations Compliance
- iv) Additional Monitoring
- v) Others (if any)  
(Recommendation given should be able to reduce the exposure or improve the level of workers safety of that particular place)

## 9. CONCLUSION

- i) Statement: whether objectives has been achieved or not

## 10. APPENDICES

- i) Process Flowchart
- ii) Copy of Sampling Method (etc: *NIOSH Method*)
- iii) Layout Plan
  - a) Machinery location
  - b) Workers Position

**Each item below is COMPULSORY to be attached in the report**

- i) Employer's Confirmation that sampling has been conducted
- ii) A copy of latest (Valid) calibration certificate for equipment used
- iii) Data Form & Calculation
- iv) A copy of Laboratory Analysis Certificate

**C. VERIFICATION OF WORKPLACE ASSIGNMENT REPORT**

*Please attached the Workplace Assignment Declaration (Appendix II) together with the Workplace Assignment.*

**D. SUBMISSION OF CHEMICAL EXPOSURE MONITORING ASSIGNMENT REPORT**

1. *The complete assignment report must be sent via **COURIER/REGISTERED MAIL** or **HAND DELIVERED** to the address below and it must arrive **before or on the APPLICATION CLOSING DATE**. Please print **"IHT1 and IC number"** on the top left-hand corner of the envelope.*

*Examination Secretariat  
Examination & Certification Division  
National Institute of Occupational Safety and Health  
Lot 1, Jalan 15/1, Seksyen 15  
43650 Bandar Baru Bangi  
Selangor Darul Ehsan*

2. **REMINDER:** *All late submission will not be entertained.*

**E. ORAL EXAMINATION**

1. *The oral examination will be based on assignment report and knowledge in the field of chemical exposure monitoring. You are required to present the report as if you are presenting it to your management. The presentation should contain the following:*
  - a) *Purpose of the air monitoring*
  - b) *Description of sampling strategy*
  - c) *Methods of sampling and analysis*
  - d) *Findings and discussions*
  - e) *Conclusion and recommendation*
2. *The presentation has to be prepared in **Microsoft Power Point (version 97 – 2003)**.*
3. *Duration of presentation session:*
  - a) *Presentation = 10 minutes*
  - b) *Questions and answers = 30 minutes*

**F. CHEMICAL SAMPLING SKILL**

*NIOSH will prepare the equipment for the chemical sampling skill assessment. However you can bring your own equipment. (If needed)*

(Note: This is only a sample report that guides you on the format and write up of the workplace assignment)

# Report of Chemical Exposure Monitoring

at

A Manufacturing Company  
*(font size 22)*

*Type of monitoring  
(Personal/Area)*

*Location  
(Factory/workplace Name, registration number & Full Address)*

By

Mr John Doe  
(ic no: 123456-67-8910)  
*(font size 16)*

Chemical Exposure Monitoring Examination  
Part II Section A: Workplace Assignment

**PERAKUAN TUGASAN TEMPAT KERJA  
WORKPLACE ASSIGNMENT DECLARATION**

Adalah saya dengan ini mengaku bahawa dokumen yang disediakan untuk Peperiksaan Pemonitoran Pendedahan Bahan Kimia merupakan hasil kerja asal saya sendiri kecuali sedutan atau petikan yang dinyatakan.

*I hereby declare that this document is prepared for the Chemical Exposure Monitoring Examination based on my original work except for citation and quotation mentioned.*

Tandatangan  
*Signature* : .....

Nama  
*Name* : .....

No. Kad Pengenalan  
*I.C. No.* : .....

Tarikh  
*Date* : .....