

OHTA1001- MINING AND MINERAL PROCESSING INDUSTRIES

The OHTA1001 course is the first of our professional level industry focussed courses. Mining has historically been identified with serious health hazards such as lung diseases and toxic materials like lead and arsenic. This course is a valuable training tool written by certified occupational hygienists working for major mining companies. The content has been well written and easy to understand with the aim being to improve :

- Awareness of health hazards and risks
- Raise the profile of occupational health and hygiene at mine sites and processing plants
- Increase knowledge of control systems to prevent health diseases and injury

It can complete your occupational health and hygiene training needs for your site staff such as OHS managers, medical and emergency site teams, OH technicians, mine site doctors as well as contractors and OH service providers.

The Trainers are approved by OHTA and require over 10 years' experience working in the industry as well as being a certified industrial hygienist. This will ensure the quality of the course with real life case histories and experience.

This 5-day course can be done in-house or on-line. The Student Manual and Trainer's Slide packs can be down loaded from the OHTA website by Approved Trainers and students attending the course. An OHTA certificate is awarded to students who successfully complete the on-line MCQ examination. Translations of the course documents and exam are available. The fee for the OHTA examination is £150 per student.

The topics covered in the course have been listed below using the comprehensive Student Manual Index.

Topics covered in the Mining and Metal Processing

2. OVERVIEW OF THE MINING AND MINERAL PROCESSING

- 2.2 Imperative for management of occupational health
- 2.3 Open pit operations
- 2.4 Underground mining
- 2.5 Mineral processing
 - 2.5.1 Sizing processes
 - 2.5.2 Hydrometallurgy processes
 - 2.5.3 Molten salt processes
 - 2.5.4 Pyrometallurgical processes

3. ROLE OF THE HYGIENIST IN THE MINING INDUSTRY

- 3.1 Functions of hygienists in the HSE team
- 3.2 Integration of hygiene into the HSE function
- 3.3 Emergency response
- 3.4 Addressing occupational hygiene issues
 - 3.4.1 Introduction
 - 3.4.2 Immediate issues
 - 3.4.3 A structured approach
 - 3.4.4 Example: The International Council on Mining & Metals (ICMM) approach

4. BASIC OCCUPATIONAL HYGIENE PROGRAMMES

- 4.1 Hazard communication – SDS systems, chemical inventories, training
- 4.2 Hearing conservation
- 4.3 Dust / respiratory protection
- 4.4 Ergonomics
- 4.5 Confined spaces
- 4.6 Radiation protection
- 4.7 Asbestos management
- 4.8 Thermal environment
- 4.9 Legionella management
- 4.10 Welding and other processes
- 4.11 Personal protective equipment (PPE)
 - 4.11.1 Respirators
 - 4.11.2 Personal hearing protection
 - 4.11.3 Eye protection
 - 4.11.4 Gloves
- 4.12 Potable water
- 4.13 Food safety
- 4.14 Alcohol and drugs
- 4.15 Fatigue
- 4.16 Vector borne and infectious diseases
 - 4.16.1 Malaria
- 4.17 Health surveillance

5. SPECIFIC ISSUES ASSOCIATED WITH MINING

- 5.1 Ventilation
 - 5.1.1 Introduction
 - 5.1.2 Ventilation design principles – non-coal mines
 - 5.1.3 Ventilation design principles – coal mines
 - 5.1.4 Summary
- 5.2 Noise
 - 5.2.1 Introduction
 - 5.2.2 Health effects
 - 5.2.3 Typical mining industry related noise levels
 - 5.2.4 Very high and impact noise
- 5.3 Volatile organic vapours
 - 5.3.2 Health effects
 - 5.3.3 Exposure levels
 - 5.3.4 Typical constituents of splicing compounds
- 5.4 Vibration (whole body & hand arm)
 - 5.4.1 Health effects
 - 5.4.2 Control of vibration
- 5.5 Spontaneous combustion
- 5.6 Hazards of overburden removal
- 5.7 Diesel emissions
 - 5.7.2 Composition of diesel exhaust fumes
 - 5.7.3 Health effects of diesel particulate (DP)
 - 5.7.4 Control of emissions
- 5.8 NORM in ores
 - 5.8.1 Background
 - 5.8.2 Radiation protection series
 - 5.8.3 Summary of safety guide for NORM (ARPANSA 2008)
- 5.9 Intrinsic safety of equipment
 - 5.9.1 Introduction
 - 5.9.2 International Electrotechnical Commission scheme
 - 5.9.3 Explosion protection
 - 5.9.4 Levels of protection and zones of application
 - 5.9.5 The Ex marking label
- 5.10 Tunnelling
 - 5.10.1 Introduction
 - 5.10.2 Respirable quartz
 - 5.10.3 Typical tunnelling operations
- 5.11 Silicosis

6. SPECIFIC ISSUES ASSOCIATED WITH MINERAL PROCESSING

- 6.1 Introduction
- 6.2 Hazards from mineral processing
- 6.3 Beneficiation of hazards
- 6.4 Specific metals and minerals
 - 6.4.1 Aluminium
 - 6.4.2 Lead / Zinc
 - 6.4.3 Gold
 - 6.4.4 Copper
 - 6.4.5 Nickel
 - 6.4.6 Coal mining
- 6.5 Acid and other processing chemical mists
- 6.6 Fixed radiation gauges
 - 6.6.1 Introduction
 - 6.6.2 Safe use of fixed radiation gauges
 - 6.6.3 Dose limits

7. EXPOSURE ASSESSMENT

- 7.1 Introduction
- 7.2 Getting to know the sites
 - 7.2.1 Initial hygiene survey & basic characterisation
 - 7.2.2 Exposure assessment monitoring follow-up
- 7.3 Exposure assessment
 - 7.3.1 Identification of similar exposure groups (SEGs)
 - 7.3.2 Exposure profile / statistical analysis
 - 7.3.3 Acceptability of the exposure profile
 - 7.3.4 Biological exposure monitoring
- 7.4 Continuous improvement cycle
- 7.5 Reporting results
- 7.6 Application of control strategies
- 7.7 Development of effective control programmes

To find out more about OHTA1001, Mining and Mineral Processing Industries, please check our website <https://ohtatraining.org/students/fmanuals/manuals/ohta1001/>, or contact the OHTA Secretariat at team@ohtatraining.org