

MSAPMOHS217A Gas test atmospheres

Unit Descriptor

This unit is about testing the working atmosphere to determine if it is safe for the proposed work. Testing involves the use of electronic test apparatus.

Employability Skills

This unit contains employability skills.

Application of the Unit

In a typical scenario an individual may be required to carry out gas testing of an atmosphere prior to entering a specific area or workspace. The competency requires the person to interpret readings and take actions based on the interpretation.

This unit is modelled on the Public Safety unit PUAFIR307A Monitor hazardous atmospheres, but does not have the prerequisites, which are not required in the industrial context. The unit is more focused on the needs of that sector and has some wording changes.

Unit Sector

No sector assigned

ELEMENT

PERFORMANCE CRITERIA

- | | |
|-----------------------------|---|
| 1. Prepare for gas testing. | <ul style="list-style-type: none"> 1.1 Determine type of gas/atmosphere to be tested. 1.2 Select and calibrate equipment in accordance with procedures. 1.3 Determine gas testing regime/sampling pattern required. 1.4 Identify hazards from possible atmosphere contaminants. 1.5 Implement hazard control measures, including use of appropriate personal protective equipment. |
| 2. Test gas. | <ul style="list-style-type: none"> 2.1 Use gas testing equipment to test gas as required. 2.2 Interpret and report readings. 2.3 Monitor gas on an ongoing basis as required. 2.4 Take required action(s) if readings are unacceptable. |
| 3. Maintain equipment. | <ul style="list-style-type: none"> 3.1 Clean and maintain gas testing equipment in accordance with procedures. 3.2 Inspect and fault find monitoring equipment in accordance with procedures. 3.3 Return gas testing equipment to required location and in required condition. 3.4 Maintain records of tests and results in accordance with procedures. |

REQUIRED SKILLS AND KNOWLEDGE

This describes the essential skills and knowledge and their level, required for this unit.

Required skills:

Language, literacy and numeracy requirements

This unit requires the ability to read and interpret a meter and then communicate the conclusions.

Writing is required to the level of completing required workplace reports/forms.

Numeracy read the instrument and interpret the results as being safe/not safe and so determine the required actions.

Required knowledge:

As may be relevant to the plant/site/process, knowledge of the following may be required:

- common chemical asphyxiants, including hydrocarbons, carbon dioxide, carbon monoxide, hydrogen cyanide, and hydrogen sulphide
- common irritants and corrosives, including chlorine, ammonia and acid bases
- common flammable gases, including acetylene, petroleum, methane, ethane, propane and butane
- narcotics
- (explosive range, upper and lower explosive limits)
- exposure standards (time weighted average, short term exposure limits, peak limitation values, examination of toxic effect at the level of a range of flammable gases)
- conditions under which atmospheres become hazardous
- units of measurement used to express concentration of atmospheric contaminants (mg/cubic m. ppm, % v/v).

Underpinning skills could include interpretation and communication of results of sampling.

RANGE STATEMENT

The range statement relates to the unit of competency as a whole. It allows for different work environments and situations that may affect performance. Bold italicised wording, if used in the performance criteria, is detailed below. Essential operating conditions that may be present with training and assessment (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) may also be included.

Context

Working environment may be hazardous, unpredictable, subject to time pressure, chaotic and expose responders to risk, on land or water, by day or night.

Safety information and procedures must include relevant legislation, Australian Standards, codes of practice, manufacturer instructions and organisational procedures.

Situations include

- confined spaces
- enclosed and partially enclosed spaces
- storage tanks, silos, pits, pipes, shafts, ducts, transport vehicles and ships
- testing as part of issuing a work permit
- monitoring as part of working under a work permit
- open areas
- holding the gas tester by hand
- lowering the gas tester into a space, eg on a line.

Workplace atmospheres may

- include visible and invisible hazards
- include hazardous surfaces
- range from safe to unsafe.

Procedures

All operations are performed in accordance with procedures.

Procedures include all relevant workplace procedures, work instructions, temporary instructions and relevant industry and government codes and standards.

All operations to which this unit applies are subject to stringent Health, Safety and Environment requirements, which may be imposed through State or Federal legislation, and these must not be compromised at any time. Where there is an apparent conflict between performance criteria and HSE requirements, the HSE requirements take precedence.

Tools and equipment

This competency includes use of equipment and tools such as:

- portable instruments
- radiation detectors
- sampling tubes and pumps
- oxygen level meter
- carbon monoxide detector
- combustible gas detectors.

Problems

'Respond to routine problems' means 'apply known solutions to a limited range of predictable problems'.

EVIDENCE GUIDE

The evidence guide provides advice on assessment and must be read in conjunction with the performance criteria, required skills and knowledge, range statement and the Assessment Guidelines for the Training Package.

Overview of assessment

A holistic approach should be taken to the assessment.

Assessors must be satisfied that the person can consistently perform the unit as a whole, as defined by the Elements, Performance Criteria and skills and knowledge.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

It is essential that competence is demonstrated in the knowledge and skills defined in this unit. These may include the ability to:

- apply personal safety principles
- interpret atmospheric conditions using atmospheric monitoring equipment
- recommend appropriate action
- maintain monitoring equipment.

Consistent performance should be demonstrated. For example, look to see that:

- gathered evidence covers a range of variables, all using different types of monitoring equipment.

Assessment method and context

Assessment will occur using industrial test equipment on an industrial site/plant and will be undertaken in a work-like environment.

Competence in this unit may be assessed:

- through written assignments
- by a demonstration activity using workplaces/atmospheres with detectable but safe levels of contaminants should be used
- by using a suitable simulation and/or a range of case studies/scenarios
- through a combination of these techniques.

In all cases it is expected that practical assessment will be combined with targeted questioning to assess the underpinning knowledge and theoretical assessment will be combined with appropriate practical/simulation or similar assessment.

Assessors need to be aware of any cultural issues that may affect responses to questions.

Assessment processes and techniques must be culturally appropriate and appropriate to the oracy, language and literacy capacity of the assessee and the work being performed.

Specific resources for assessment

This section should be read in conjunction with the Range Statement for this unit of competency. Resources required include suitable access to an operating plant or equipment that allows for appropriate and realistic simulation. A bank of case studies/scenarios and questions will also be required to the extent they form part of the assessment method. Questioning may take place either in the workplace, or in an adjacent, quiet facility such as an office or lunchroom. No other special resources are required.

Access must be provided to appropriate learning and/or assessment support when required. Where applicable, physical resources should include equipment modified for people with disabilities.