



**Australian Government**

# **DEFEO001 Apply knowledge of explosive ordnance chemistry**

**Release: 1**

## DEFEO001 Apply knowledge of explosive ordnance chemistry

### Modification History

Release	TP version	Comments
1	DEF12 V2	First release.

### Unit Descriptor

This unit covers the competency required to analyse and apply knowledge of the chemistry of explosive ordnance.

The application of the knowledge of explosive ordnance chemistry is specific to the work being undertaken by individuals involved within a variety of applications including manufacturing, policy development, technical manual development, platform integration, configuration, staff processes, transport, disposal, trials and inter-operability.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication. In a Defence context, this means that there is no civilian need to hold this unit in order to meet licensing, legislative, regulatory or certification requirements.

### Application of the Unit

This competency applies to individuals who are required to analyse the chemistry of explosive ordnance in the context of their work environment and in relation to their workplace functions.

The unit requires the application of high level, fully independent, complex judgements with a detailed knowledge of the chemistry of explosive ordnance, analysis of complex data and the production of specific documents detailing the outcomes of highly specialised technical functions in specialised contexts.

All aspects of this unit must be carried out in accordance with legislation, relevant standards, and organisational policy and procedures.

### Licensing/Regulatory Information

Not applicable.

### Pre-Requisites

Not applicable.

## Employability Skills Information

This unit contains employability skills.

## Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

## Elements and Performance Criteria

### ELEMENT

**1. Access and analyse relevant explosive ordnance chemical information**

**2. Implement recommendations specific to explosive ordnance**

### PERFORMANCE CRITERIA

- 1.1 The purpose of the analysis, including the relevance of the chemistry of explosive ordnance, is identified.
- 1.2 Relevant explosive ordnance ***safety, legislative and statutory requirements*** are identified and obtained.
- 1.3 Information obtained is analysed to determine the relevance within its application and in the context of the organisation.
- 1.4 Outcomes of the analysis are formulated and recommendations relevant to safety, legislative and statutory requirements and application are provided.
- 2.1 Work health and safety requirements relevant to explosive ordnance chemistry are applied in accordance with the organisation requirements.
- 2.2 Work being undertaken is established and the relevant recommendations are applied in accordance with ***organisation*** requirements.
- 2.3 Effectiveness of the recommendations is assessed, reviewed and recorded.
- 2.4 Recommendations are adjusted if required and documented for future application.

## Required Skills and Knowledge

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

### Required Skills

- apply explosive ordnance chemistry knowledge relevant to work being performed
- apply safety, legislative and statutory requirements relevant to explosive ordnance chemistry
- interpret organisation role relevant to explosive ordnance chemistry
- use appropriate information technology and software
- identify relevant information
- conduct research
- analyse and evaluate information
- write research reports including recommendations

### Required Knowledge

- explosive ordnance knowledge relevant to work being performed
- principles of atomic theory, chemical bonding and organic chemistry
- properties of explosives and explosive compounds
- explosive process
- principles of thermodynamics, including:
  - oxygen balance of explosives
  - products of detonation
  - heats of formation
- decomposition mechanisms of explosives, including:
  - atmospheric effects on the rate of degradation of an explosive
  - signs of degradation in explosive fills
- insensitive munitions
- toxicology of explosives

## Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

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

Assessment must confirm the ability to apply knowledge of the chemistry of explosive ordnance to assist in work and to guide problem solving. Adherence to relevant work health and safety requirements and operational safety must be demonstrated.

**Context of and specific resources for assessment****Consistency in performance**

Competency should be demonstrated in a range of actual or simulated explosive ordnance contexts.

**Context of assessment**

Competency should be assessed in the workplace or under conditions that accurately simulate a realistic workplace in accordance with all relevant legislation and organisation requirements.

**Specific resources for assessment**

Access to information related to the properties of explosive ordnance chemistry.

**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 in the Performance Criteria is detailed below.

***Safety, legislative and statutory requirements*** may include:

***Organisations*** may include:

- Australian and international standards
- Australian explosives code
- Commonwealth explosives regulations
- organisation explosive classification listing
- organisation policy
- defence organisation
- enterprises that work with explosive ordnance
- other government departments or instrumentalities that work with explosive ordnance

**Unit Sector(s)**

Not applicable.