



Australian Government

Department of Education, Employment and Workplace Relations

MEM19003B Handle gem materials

Release: 1

MEM19003B Handle gem materials

Modification History

Not Applicable

Unit Descriptor

Unit descriptor	This unit covers handling and examining gem materials during jewellery manufacture, repair or alteration to minimise the risk of damage to gem materials (including diamonds).
------------------------	--

Application of the Unit

Application of the unit	This unit applies to handling of gem materials to minimise risk of damage, through familiarity and understanding of the physical and chemical properties of natural, composite, synthetic, imitation and treated gem materials that may affect handling requirements. Emphasis is placed on knowledge of the principles of gemology, gemstone and diamond nomenclature, gemstone processing enhancement and repair, and appreciation of gemstone qualities. This unit applies to an individual working autonomously in a jewellery manufacturing environment and guided by strict rules of procedure. Equipment would include 10x loupe, tweezers and thermal probes. The range of gem materials would include all natural, synthetic, treated, composite and imitation gem materials that may reasonably be expected to be encountered in the workplace. Note: The competencies covered by this unit do not include the requirement to perform accurate and positive gemstone identifications. Band: A Unit Weight: 6
--------------------------------	---

Licensing/Regulatory Information

Not Applicable

Pre-Requisites

Prerequisite units		
Path 1	MEM19003B	Handle gem materials

Employability Skills Information

Employability skills	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 performance needed to demonstrate achievement of the element. Where bold italicised text is used, further information is detailed in the required skills and knowledge section and the range statement. Assessment of performance is to be consistent with the evidence guide.
---	--

Elements and Performance Criteria

ELEMENT	PERFORMANCE CRITERIA
1. Prepare equipment for gemstone examination	1.1.Examination methods and <i>equipment</i> are selected appropriate to the gem material and examination requirements. 1.2.Equipment and specimen/s are prepared.
2. Perform gemstone examinations	2.1.The physical and optical properties of gem materials are observed. 2.2.Examination results are recorded and verified.
3. Handle gem materials	3.1.Handling measures appropriate to gem material are identified. 3.2.Gem materials are handled to minimise risk of damage.
4. Investigate and report examination results	4.1.Examination results are prepared and recorded.

Required Skills and Knowledge

REQUIRED SKILLS AND KNOWLEDGE

This section describes the skills and knowledge required for this unit.

Required skills

Look for evidence that confirms skills in:

- reading, interpreting and following information on written job instructions, specifications, standard work procedures, charts, lists, illustrations and other applicable reference documents
- checking and clarifying task-related information
- entering task-related information onto proformas and workplace documents
- selecting procedures and equipment for examination of gem materials
- preparing, pre-setting, balancing, calibrating, and levelling equipment
- cleaning specimens
- using equipment according to manuals and standard operating procedures
- identifying relevant physical and optical properties of gemstones
- recording results and comparing results with known control items/charts/lists/graphs/diagrams and resource materials
- reading valuation documents and making comparisons
- verifying outcomes

REQUIRED SKILLS AND KNOWLEDGE

- selecting and applying handling measures and precautions in relation to given gem materials, work processes and tools/equipment
- preparing format/documentation of results according to standard operating procedures.
- interpreting results
- obtaining sufficient evidence to support conclusions
- undertaking numerical operations and calculations/formulae within the scope of this unit
- following verbal instructions

Required knowledge

Look for evidence that confirms knowledge of:

- examination methods for gem materials in relation to the properties and features that may affect specific materials during jewellery manufacture, repair or alteration
- equipment required for examination and the function of each
- limitations of the selected equipment/methods
- standard operating procedures and supplier/manufacture specifications
- the procedures for correct use of selected equipment
- definitions of processes and features
- physical and optical properties of relevant gemstones
- the process for verifying results
- resource materials
- handling measures and precautions for specific gem materials during jewellery manufacture, repair or alteration
- specific handling measures and precautions used during given jobs
- evidence used in support of conclusions
- terminology and definitions
- limitations/errors in process/methods
- sources of independent verification
- hazards and control measures associated with handling gem materials, including housekeeping
- the effects of inadequate housekeeping and workplace procedures
- use and application of personal protective equipment
- safe work practices and procedures

Evidence Guide

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 person who demonstrates competency in this unit must be able to handle and examine gemstone materials. Competency in this unit cannot be claimed until all prerequisites have been satisfied.

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

Assessors must be satisfied that the candidate can competently and consistently perform all elements of the unit as specified by the criteria, including required knowledge, and be capable of applying the competency in new and different situations and contexts.

Context of and specific resources for assessment

This unit may be assessed on the job, off the job or a combination of both. Where assessment occurs off the job, i.e. the candidate is not in productive work, an appropriate simulation must be used where the range of conditions reflects realistic workplace situations. The competencies covered by this unit would be demonstrated by an individual working alone or as part of a team. The assessment environment should not disadvantage the candidate.

This unit could be assessed in conjunction with any other units addressing the safety, quality, communication, materials handling, recording and reporting associated with handling and examining gemstone materials or other units requiring the exercise of the skills and knowledge covered by this unit.

Method of assessment

Assessors should gather a range of evidence that is valid, sufficient, current and authentic. Evidence can be gathered through a variety of ways including direct observation, supervisor's reports, project work, samples and questioning. Questioning techniques should not require language, literacy and numeracy skills beyond those required in this unit of competency. The candidate must have access to all tools, equipment, materials and documentation required. The candidate must be permitted to refer to any relevant workplace procedures, product and manufacturing specifications, codes, standards, manuals and reference materials.

EVIDENCE GUIDE**Guidance information for assessment****Range Statement****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.

Equipment

- Refractometer
- UV light
- Microscope
- 10 X loupe
- Tweezers

Investigate

- Assess need for further examination
- Cross reference other records
- Cross reference valuation documents

Unit Sector(s)**Unit sector****Co-requisite units****Co-requisite units**

Competency field

Competency field	Jewellery and horological
------------------	---------------------------