



**Australian Government**

# **Assessment Requirements for MEM48006 Prepare and examine metallographic samples**

**Release: 1**

# Assessment Requirements for MEM48006 Prepare and examine metallographic samples

## Modification History

Release 1. Supersedes and is equivalent to MSATCM401A Prepare and examine metallographic samples.

## Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include:

- following work instructions, standard operating procedures (SOPs) and safe work practices
- nominating the appropriate cutting process and the appropriate directionality of the sample plane for examination on at least two occasions
- mixing and/or preparing etchant solutions according to safety data sheets (SDS) and standard operating procedures (SOPs)
- mixing and/or preparing mounting resins
- basic cutting, grinding and polishing of samples including mechanical and electrolytic polishing on at least two occasions
- etching of samples
- using a microscope to identify microstructures on at least two occasions, including metallic and non-metallic features
- prepare photomicrographs in accordance with work requirements
- identifying and preparing reports to meet requirements
- circulating and filing completed report in accordance with procedures.

*Note: Where a volume and/or frequency is not specified, demonstration must be provided at least once.*

## Knowledge Evidence

Evidence required to demonstrate the required knowledge for this unit must be relevant to and satisfy the requirements of the elements and performance criteria and include knowledge of:

- safe work practices and procedures and use of personal protective equipment (PPE)
- metallographic examinations
- mechanical sample preparations
- understanding of microstructures of metals
- chemical applications and safety including SDS and potential hazards
- composition and suitability of etchants
- processing and recording of photomicrographs
- relevant Australian or international standards.

## Assessment Conditions

- Assessors must:
  - have vocational competency in preparing and examining metallographic samples at least to the level being assessed with relevant industry knowledge and experience
  - satisfy the assessor requirements in the *Standards for Registered Training Organisations 2015* or its replacement and comply with the *National Vocational Education and Training Regulator Act 2011*, its replacement or equivalent legislation covering VET regulation in a non-referring state/territory as the case requires.
- Where possible, assessment must occur in operational workplace situations. Where this is not possible or where personal safety or environmental damage are limiting factors, assessment must occur in a sufficiently rigorous simulated environment that reflects realistic operational workplace conditions that cover all aspects of workplace performance, including environment, task skills, task management skills, contingency management skills and job role environment skills.
- Conditions for assessment must include access to all tools, equipment, materials and documentation required including relevant workplace procedures, product and manufacturing specifications.
- Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

## Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>