



Australian Government

MEM48012 Calculate and predict chemical outcomes in metallurgical situations

Release: 1

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Modification History

Release 1. Supersedes and is equivalent to MSATCM501A Calculate and predict chemical outcomes in metallurgical situations.

Application

This unit of competency defines the knowledge and skills required to apply appropriate chemical principles and techniques to calculate and predict outcomes in metallurgical situations.

It requires application of chemical principles and techniques as a member of a team or as an individual in metallurgical situations.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

MEM48011 Apply basic chemical principles to metallurgy

Competency Field

Metallurgy

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Determine job requirements	1.1 Follow standard operating procedures (SOPs) 1.2 Comply with work health and safety (WHS) requirements at all times 1.3 Undertake consultations and briefings with managers, employers and customers 1.4 Research information to determine situation requiring metallurgical analysis
2. Select chemical principles and techniques relevant to	2.1 Select relevant chemical techniques and principles for metallurgical situation 2.2 Select technologies associated with chemical techniques relevant to

Elements	Performance Criteria
<i>Elements describe the essential outcomes.</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
metallurgy	the metallurgical situation
3. Apply chemical principles and techniques	3.1 Apply basic chemical principles to obtain required solutions 3.2 Complete accurate chemical calculations with correct use of significant figures 3.3 Apply chemical techniques and associated technologies to obtain required solutions 3.4 Communicate solutions to appropriate personnel and situations and record in accordance with procedures

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Metallurgy includes the scientific and technical oversight of production of commercial metal products or the development of new alloys and processes involving one or more of the following:	• extraction • smelting • refining • casting • heat treating • welding • forging • fabrication.
Sources of information include one or more of the following	• reference texts • manufacturer catalogues and industrial magazines • websites • phone information gathering • email information gathering.

Unit Mapping Information

Release 1. Supersedes and is equivalent to MSATCM501A Calculate and predict chemical outcomes in metallurgical situations.

Links

Companion Volume implementation guides are found in VETNet -

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