



Australian Government

Assessment Requirements for MSMBIO301 Process biomass using pyrolyser

Release: 1

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Modification History

Release 1. New unit.

Performance Evidence

There must be evidence the candidate has completed the tasks outlined in the elements and performance criteria of this unit, and:

- processed at least 1 type of biomass to specified requirements using pyrolyser.

Knowledge Evidence

There must be evidence the candidate has knowledge of:

- principles and processes of pyrolysis, including:
 - standard operating procedures
 - biomass pre-treatment
 - thermal cracking of biomass
 - operating condensing unit/chillers to collect bio-oil
 - managing oxygen free environment in pyrolyser
- pyrolysis equipment including:
 - biomass storage and drying
 - pyrolyser and its components
 - ancillary equipment
 - feed system (auger, belt or cart)
 - air lock
 - condensing system
- advantages and disadvantages of pyrolysis
- biomass types, including:
 - solid (greenwaste, bagasse, woodwaste, construction and domestic waste, plastics, tyres)
 - key variables
 - dewatering requirements
 - particle size requirements
 - yields
- the nature and condition of materials entering and leaving each stage of the process, the changes which have occurred in that stage and why they have occurred
- methods of ramping up and down in response to feed changes and the advantages and disadvantages of each

- hierarchy of control
- start up, operation and shut down of equipment including emergency shut down, isolation and de-isolation procedures
- work health safety (WHS) procedures including personal protective equipment (PPE) requirements
- pyrolysis hazards, and:
 - their possible causes
 - potential consequences
 - appropriate risk controls.

Assessment Conditions

Skills must have been demonstrated in the workplace or in a simulated environment that reflects workplace conditions and contingencies. The following conditions must be met for this unit:

- use of suitable facilities, equipment and resources, including:
 - biomass, pyrolyser, PPE
- modelling of industry operating conditions, including:
 - routine and non-routine problems.

Assessors must satisfy the NVR/AQTF mandatory competency requirements for assessors.

Links

Companion Volume implementation guides are found in VETNet. -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=d1287d36-dff4-4e9f-ad2c-9d6270054027>