

# Assessment Evidence Guide

## For

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Level-5

**Module name**  
(Formative Assessment)

*8<sup>th</sup> -12<sup>th</sup> March 2021*



**National Vocational & Technical  
Training Commission**

<b>Title of Qualification:</b> Metallography Technician-II	CS Code:	Level: 5	Version: 01
<b>Competency Standard Title:</b>  <b>Perform Etching Operation</b>	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b>		

Candidate Details	Name: .....  Registration/Roll Number:.....
Guidance for Candidate	<p><b>To meet this standard, you are required to complete the following within the given time frame (for practical demonstration &amp; assessment):</b></p> <p><b>Assessment Task 1:</b> Candidate is required to: Perform Chemical Etching Operation</p> <p><b>Assessment Task 2:</b> Candidate is required to: Perform Electrolytic Etching Operation</p> <p><b>And complete:</b></p> <ol style="list-style-type: none"> <li><b>1. Knowledge assessment test (Written or Oral)</b></li> <li><b>2. Portfolios at the time of assessment (if any)</b></li> </ol>
Minimum Evidence Required	<p><b>During a practical assessment, under observation by an assessor, you will complete:</b></p> <p><b>Assessment Task 1</b></p> <p><b>P1.</b> Identify etching solution specifications according to metallographic standard and type of specimen.</p> <p><b>P2.</b> Adopt standard safety practice and procedure for handling acid chemicals.</p> <p><b>P3.</b> Make etching solution in china dish as per requirement.</p> <p><b>P4.</b> Dip the specimen into solution with the help of tong for several time until its shine become dim.</p> <p><b>P5.</b> Wash with distil water then clean with alcohol.</p> <p><b>P6.</b> Dry the specimen with air dryer.</p>

	<p><b>Assessment Task 2</b></p> <p><b>P1.</b> Identify electrolyte solution specifications according to metallographic standard and type of specimen.</p> <p><b>P2.</b> Adopt standard safety practice and procedure for handling acid chemicals.</p> <p><b>P3.</b> Make etching solution in beaker as per requirement.</p> <p><b>P4.</b> Transfer solution in machine bath.</p> <p><b>P5.</b> Dip the specimen in bath.</p> <p><b>P6.</b> Connect the specimen with positive pole.</p> <p><b>P7.</b> Select the current and time for etching.</p> <p><b>P8.</b> Wash with distil water then clean with alcohol.</p> <p><b>P9.</b> Dry the specimen with air dryer.</p> <p><b>Portfolios required at the time of assessment (if any) for</b></p>
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**Assessors Judgment Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name: ..... Registration/Roll Number: ..... Candidate Signature: .....
Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: ..... Signature of the Assessor: .....

Assessment Summary (to be filled by the assessor)							
Activity	Method					Result	
Nature of Activity	Written	Oral	Observation	Portfolio	Role Play	Competent	Not Yet Competent
Practical Skill Demonstration			✓				
Knowledge Assessment	✓	✓					
Other Requirement							

Each Assessment Task (with performance criteria)				
Assessment Task 1		Description of assessment task 1		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	Identify etching solution specifications according to metallographic standard and type of specimen.			
	Adopt standard safety practice and procedure for handling acid chemicals.			
	Make etching solution in china dish as per requirement.			
	Dip the specimen into solution with the help of tong for several time until its shine become dim.			
	Wash with distil water then clean with alcohol.			
	Dry the specimen with air dryer.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

Assessment Task 2		Description of assessment task 2		
During the practical assessment, candidate demonstrated the following:		Yes	No	Remarks
	Identify electrolyte solution specifications according to metallographic standard and type of specimen.			
	Adopt standard safety practice and procedure for handling acid chemicals.			
	Make etching solution in beaker as per requirement.			
	Transfer solution in machine bath.			
	Dip the specimen in bath.			
	Connect the specimen with positive pole.			
	Select the current and time for etching.			
	Wash with distil water then clean with alcohol.			
	Dry the specimen with air dryer.			
Competent <input type="checkbox"/>		Not Yet Competent <input type="checkbox"/>		

<b>Title of Qualification:</b> Metallography Technician-II	CS Code:	Level:	Version: 01
<b>Competency Standard Title:</b> <b>Perform Etching Operation</b>	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

Guidance for Candidate	<b>To complete your assessment for this Competency Standard, you need to answer the questions on the following pages successfully.</b>
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**Assessors Guide** (to be completed by the Assessor and signed both by the assessor and the candidate after the assessment)

Candidate Details	Name:..... Registration/Roll Number: Candidate Signature: .....
Written Assessment Outcome	COMPETENT <input type="checkbox"/> NOT YET COMPETENT <input type="checkbox"/> Name of the Assessor: ..... Assessor's code: Signature of the Assessor: .....

<b>Title of Qualification:</b> Metallography Technician-II	CS Code:	Level:4	Version: 01
<b>Competency Standard Title:</b>  <b>Perform Etching Operation</b>	<b>Assessment Date (DD/MM/YY):</b>  <b>Assessment Time:</b> 30 min		

#### WRITTEN ASSESSMENT

Question	Candidate's answer
Define purpose of etching in Metallography.	<ul style="list-style-type: none"> <li>• Surface opaque</li> <li>• To see Microstructure</li> </ul>
Explain etching techniques	<ul style="list-style-type: none"> <li>• Dip in Chemical solutions</li> </ul>
Define General chemical use in etching.	<ul style="list-style-type: none"> <li>• HCL</li> <li>• Nitric Acid</li> <li>• H2SO</li> </ul>
What is Etching time and temperatures?	<ul style="list-style-type: none"> <li>• 5sec- 5min</li> <li>• 50-80 C</li> </ul>
Define etching glassware.	<ul style="list-style-type: none"> <li>• Beakers</li> <li>• Pipet</li> </ul>