

**Specification of Competency Standards**  
**for the Manufacturing Technology Industry**  
**Unit of Competency**

Functional Area - Product Manufacturing

Title	Carry out plasma surface treatment
Code	106432L3
Range	This unit of competency is applicable to the production department of the plastics industry corporation. Practitioners should be capable to recognise all kinds of plasma surface treatment technologies and carry out plasma surface treatment
Level	3
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <ol style="list-style-type: none"> <li>1. Understand relevant knowledge of all kinds of plasma surface treatment technologies <ul style="list-style-type: none"> <li>• Recognise all kinds of principles, application and final effectiveness of plasma surface treatment technologies, such as vacuum and glow discharge</li> <li>• Recognise general methods of plasma surface treatment, including plasma treatment of plastic surface activation and plasma treatment of plastic surface cleaning</li> <li>• Recognise the limitations of all kinds of plasma surface treatment technologies</li> <li>• Recognise the characteristics of using plasma surface treatment, applications and control methods of hydrophilic plastic surface, hydrophobic plastic surface, surface roughening of plastic materials and dust proof of silicone material etc</li> <li>• Recognise all kinds of material substrate of application of plasma treatment technologies</li> <li>• Recognise the operation of vacuum system</li> <li>• Understand the device structure, operation skills and functions of plasma surface treatment</li> <li>• Understand the operation and device structure of the vacuum pump</li> <li>• Understand the safety using method of high-voltage</li> <li>• Understand the operation of the instrument of precision gas flow</li> <li>• Understand the operation of mechanical and electrical circuits</li> <li>• Understand the application function and safety using methods of all kinds of related chemicals, chemical specialty gases and gases</li> </ul> </li> <li>2. Apply plasma surface treatment in production and carry out evaluation and improvement <ul style="list-style-type: none"> <li>• Determine whether the plastic or metal materials are suitable for plasma surface treatment</li> <li>• Determine an appropriate methods of plasma surface treatment for products</li> <li>• Determine the specific plasma treatment technology program in accordance with the material</li> <li>• Apply the plasma technologies and techniques, such as current, gas and technological process in accordance with different materials applications</li> <li>• Operate plasma surface treatment machines</li> <li>• Master the entire plasma treatment technology, self-adjust the technologies parameters, so as to reach the desired effect of plastic products</li> <li>• Analyse the quality problems of the products of plasma surface treatment and carry put improvement</li> <li>• In accordance with the plasma surface treatment technological processes, organise the production guidelines and detailed arrangements</li> </ul> </li> <li>3. Professional handling of plasma surface treatment <ul style="list-style-type: none"> <li>• Follow safety guidelines and related codes of practice, in accordance with the requirements of technologies and techniques, product specifications and production efficiency, carry out plasma surface treatment</li> </ul> </li> </ol>

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Assessment Criteria	The integrated outcome requirements of this unit of competency are: <ul style="list-style-type: none"><li>• Capable to operate relevant plasma surface treatment technologies and techniques independently</li><li>• Capable to fine-tune the relevant technologies and techniques in accordance with the workpiece material and product requirements</li><li>• Capable to solve the general operation problems of the equipment of plasma surface treatment, carry out preventive maintenance and continuous improvement</li></ul>
Remark	