Introduction to Furnace Operations

**Duration:** 20 mins  **Level:** Entry  **Pass mark:** 80%

**Course Description:**

**Who is the course for?**

This eLearning course is aimed at individuals working in refineries who require an overview of how furnaces work. As an introductory course, it is particularly suited to those new to their role or the industry.

**Is previous experience required?**

You do not need prior knowledge or experience to complete this course and it is assumed that you are competent in your designated role.

**How will the course benefit me?**

Refineries aim to furnaces efficiently so that fuel isn't wasted in heating up excess air. This course will give you a basic understanding of the principles of combustion, the operation of a furnace and the parameters for efficient combustion.

It will also indicate the control systems in place on furnaces to ensure safe operation and the pre-start checks that must be carried out to use a furnace safely.

**How will the course benefit my company?**

By ensuring you are aware of how furnaces operate, you will have a better understanding of the need for fuel efficiency. You will also be better able to work with furnaces safely to reduce the risk of incidents at your worksite.
What standards are referenced in the course?
This course does not refer to specific legislation or standards but is written to current HSE guidelines, industry best practice and standard operating procedures.

Is there an assessment?
Once you have completed the course, you will be asked a series of questions to check your knowledge and understanding. These are based on the learning objectives for the course and have a pass mark of 80%.

Learning Objectives:
• Identify the principles of Combustion
• Describe how the stoichiometric fuel-air ratio is identified from analysis data
• Identify how heat is exchanged in a furnace
• Identify the main component of a furnace
• Identify the parameters for efficient combustion
• Identify the key conduction problem experienced with furnaces
• Identify the components of furnace control systems
• Identify the pre-start checks that an operator should complete before starting a furnace