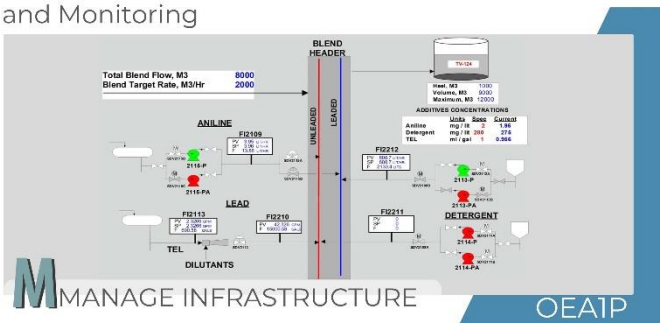
Additives Control
and Monitoring



Topic ID	**OEA1T**
Title	**Additives Control and Monitoring**
Category	**M-Manage Infrastructure**
eLearning Level	**Basic**

Introduction

Soluble chemicals, called additives, are mixed in Gasoline to improve gasoline performance characteristics. Additives can achieve the gasoline characteristic, which is not inherited by Gasoline. Additives are petroleum-based raw materials.

They have very specialized chemistry/function. The concentration of additives is in the ppm (parts-per-million) range. One ppm is equivalent to one mg per kg. The additives do not enhance the octane ratings of Gasoline. They serve only as lubricants. The additives facilitate improving efficiency.

This topic will discuss the types and properties attributed by various additives to gasoline blends.

Classifications of Additives

There are various classes of additives. For example:

- **Drag reducers** - Pumping cost decreased
- **Oxidation Inhibitors** – They prevent the formation of Gums. Here, oxygen is not allowed to react with Gasoline. Antioxidant hinders Phenols. These amines are aromatic.
- **Markers** - Gasoline moves through the supply chain. It helps to track gasoline movement. It is added to Gasoline.
- **Corrosion Inhibitors** - Due to the presence of water, there is corrosion in pipelines and tanks. Corrosion Inhibitors prevent corrosion. They consist of carboxylates and carboxylic acids.

A hydrophobic film is formed on the metal surface by separating from metal, and it acts as an obstruction. The key factors influencing Corrosion Inhibitors' efficiency are Affinities towards the metal surface, molecular structure, and chemical composition. They also meet the fuel specifications. There are silver, copper, and steel Corrosion Inhibitors.

They help in cost-effective corrosion control. Examples of Corrosion Inhibitors are Pipeline Corrosion Inhibitor and Aviation Fuel Corrosion inhibitors.

- **Dyes** - They can differentiate various grades of a product. The most common fuel dyes are Solvent Blue 35, Solvent Red 24, Solvent Yellow 124, Solvent Red 26, etc.
- **Metal deactivators** - Catalyzation of gasoline oxidation by active metal ions is prohibited by them. They are chelating agents.
- **Deposit control additives** - They ensure smooth functioning of the fuel injection system as well as the carburetor.
- **Antiknock compounds** - At present, they are not used. They consist of MMT/TEL.
- **Demulsifier** - In the context of centrifugal pumps, there is a strong sheaf field. The Gasoline and water emulsion is prevented by a demulsifier. They are obtained from polyglycol.
- Drag reducers, markers, and dyes are Anti-icing additives.

Summary

Fuel derivatives are meant for a specific objective and high performance. They are specialized chemicals and are added to fuels in ppm.

Options for eLearning this topic

Mode of eLearning	Available?
Free Course	No
Refresher Course	Yes
Pick N Choose (Custom Curriculum)	Yes
Advanced Level Course	Yes
Structured MCOR Curriculum	Yes