# Corrosion in Refineries: A Comprehensive Guide

Corrosion is a major problem in refineries, leading to equipment failures, production losses, and safety hazards. The cost of corrosion in refineries is estimated to be in the billions of dollars each year.

This article provides a comprehensive overview of corrosion in refineries, including the different types of corrosion, the causes of corrosion, and the methods for preventing and controlling corrosion.


## Corrosion in Refineries (European Federation of Corrosion (EFC) Series Book 42)

★★★★★ 5 out of 5

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| Enhanced typesetting | : Enabled |
| Print length | : 128 pages |
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### Types of Corrosion

There are many different types of corrosion that can occur in refineries, including:

- **General corrosion** is the most common type of corrosion, and it occurs when the metal surface is exposed to a corrosive environment.

This type of corrosion can be caused by a variety of factors, including exposure to water, oxygen, acids, and bases.

- **Pitting corrosion** is a localized form of corrosion that occurs when the metal surface is exposed to a corrosive environment that contains chloride ions. This type of corrosion can lead to the formation of pits, which can weaken the metal and cause it to fail.
- **Crevice corrosion** is a localized form of corrosion that occurs when the metal surface is exposed to a corrosive environment that is trapped in a crevice. This type of corrosion can lead to the formation of cracks, which can weaken the metal and cause it to fail.
- **Stress corrosion cracking** is a type of corrosion that occurs when the metal surface is exposed to a corrosive environment and is also under stress. This type of corrosion can lead to the formation of cracks, which can weaken the metal and cause it to fail.

### Causes of Corrosion

There are many different factors that can contribute to corrosion in refineries, including:

- **Exposure to water** is one of the most common causes of corrosion in refineries. Water can contain dissolved oxygen, which can react with the metal surface to form rust. Water can also contain chloride ions, which can lead to pitting corrosion.
- **Exposure to oxygen** is another major cause of corrosion in refineries. Oxygen can react with the metal surface to form oxides, which can weaken the metal and make it more susceptible to corrosion.

- **Exposure to acids and bases** can also lead to corrosion in refineries. Acids can react with the metal surface to form salts, which can weaken the metal. Bases can also react with the metal surface to form hydroxides, which can also weaken the metal.
- **Stress** can also contribute to corrosion in refineries. Stress can cause the metal surface


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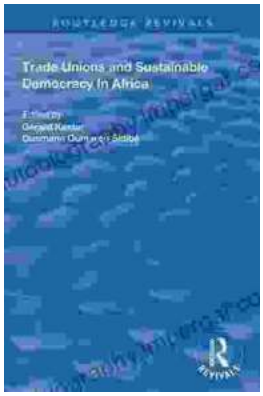


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