

# TECHNICAL CONCEPT

## RUST & PREVENTION

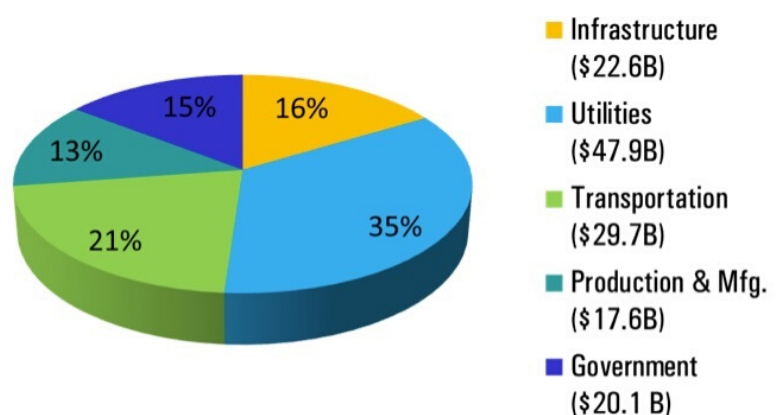


In industries, specifically manufacturing, marine, public transit industry and many of the others, rust is one of the biggest evil. Rust leads to many challenges for different components, machines equipment, structures, etc.

## COST OF RUST & CORROSION

- Corrosion costs are equivalent to about 3%–4% of each nation's gross domestic product (GDP). Using a 3.4% of global GDP (2013), the global cost of corrosion can then be estimated to be US\$2.5 trillion.

COST OF CORROSION IN INDUSTRY CATEGORIES



Losses of hundreds of billions per year due to corrosion ( )

- Loss of \$276 billion annually in the United States (about 3.1% of GDP)
- India losses 1.52 lakh crore annually (about 2.4% of GDP)

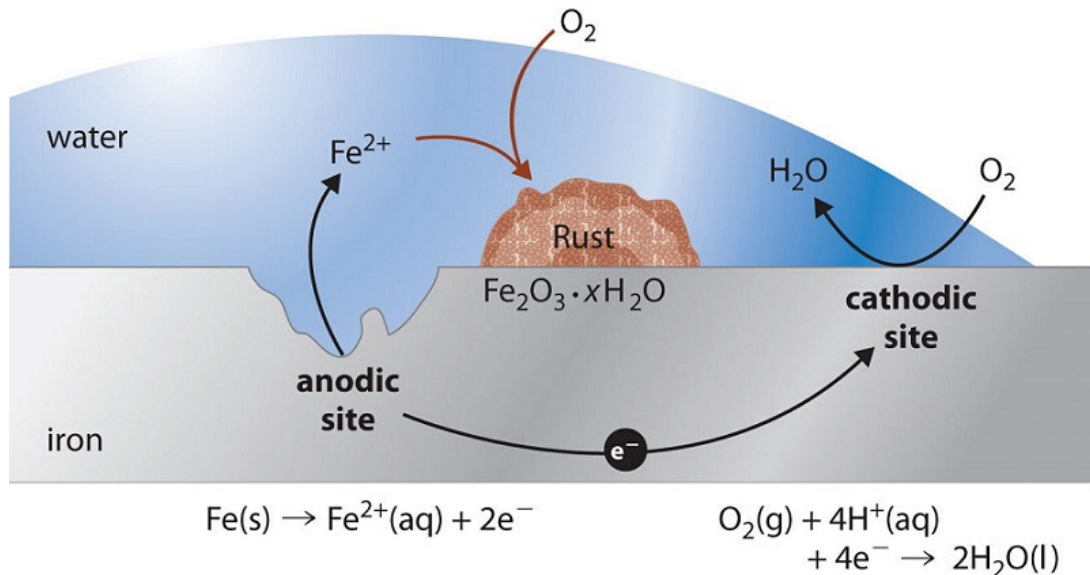
By using corrosion control measurements and practices, it is estimated that savings of between 15% and 35% of the cost of corrosion could be achieved i.e., between US\$375 and \$875 billion annually on a global basis.

Cost of rust & corrosion has reduced significantly all thanks to evolving solutions in the industry. We now have a number of rust preventive solutions for all types of industrial needs.

Before moving onto the solutions of rust preventive we need to understand rust and its types, causes and, prevention towards the same.

## WHAT IS RUST?

Rust is oxidation. Any film formed on the metal surface due to oxidation is rust. The orange or red colour coating formed on the surface when exposed to air and moisture is rust. Rust is an electrochemical reaction hence an irreversible process.



## TYPES OF RUST?

### Light Rust:

The metal surface is clear and only small quantities of rust can be observed. It does not damage the surface and it gets cleaned off easily



### Medium Rust:

The rust is all over the metal and we can hardly see the metal surface and rust is well adheres to the surface. It does damage the surface once cleaned it cleans with slight scrubbing

### Heavy Rust:

The rust is all over the metal and rust loosely adhered it comes by chipping of the material surface. It damages the surface and it is advisable to use rust converter on the surface than using rust cleaner



## **CHALLENGES FACED DUE TO RUST ON THE SURFACE:**

Rust causes many problems associated with the surface of the metal for structures, equipments and components etc.

### **Economic & Safety issue**

An industry can face major losses such as economic and physical damage due to rusted structures. Once structure gets rusted it becomes brittle endangering the safety of users.

### **Reduction in the lifespan of a product**

The major impact of rust is on the lifespan of the product, as it may lead to damage parts and will have to be repaired or replaced depending if the rust turned out more severe.

These issues majorly cover the problems faced by many industries. It has turned out to be major concern especially in the areas where moisture presence is high. (The moisture acts as a catalyst for the oxidation process.)

- Economic cost related to rust
- Loss of production/downtime
- Product contamination
- Loss of products
- Accidents
- Increased capita cost – over design
- Environment clean-up and worker health
- Effective solution for rust prevention

There are a number of solutions available for rust prevention and cleaning of rust such as rust preventive oil, coating, cleaners for rust prevention oil and water - based rust preventive, dewatering rust preventive etc. Depending upon one's requirement measures are taken for rust prevention.

Major points to be considered while selecting rust preventive

- Where the part to be protected is stored?
- Period of protection?
- Type of film?
- Type of metal on which it is to be applied?
- Is there high humidity in the environment?

Considering the above points one can select rust preventive. One can also go for rust cleaner and then apply rust preventive. The solution available to protect is by shielding the metal for a specific period.

Mosil provides a wide range of rust preventives and cleaner as per requirement for the component to be cleaned or coated. One can select the product based on the requirement.

Few products are listed below which provides an effective solution.

## **MOSIL'S SOLUTION**

### **DW - 79**

It is a specially formulated wax type corrosion protection coating that leaves a waxy film capable of withstanding severe moisture and humidity etc.

### **NTKOR - 4823**

It is Water Displacing type, solvent deposited rust preventive that leaves a very soft low viscosity film. The soft film has good rust preventive characteristics.



## RPH – 3840

It is a specially formulated peelable corrosion protection coating for medium-term indoor and outdoor protection of components etc. It leaves a Peelable film capable of withstanding severe moisture and humidity etc. providing protecting against rust and corrosion up to 24 to 30 months..



## NTKOR - Rust Clean

It is a multipurpose lubricant that works as a penetrant cum cleaner apart from its function as a lubricant. It is a must for any maintenance personnel and has diversified applications.



And there are many more. One can select based on their requirement as well as with the help of Mosil team one can select the optimized solution for their parts to be protected or cleaned.