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DRY CORROSION	WET CORROSION
Involves direct attack of atmospheric gases	· Occurs due to the existence of seperate anodic and cathodic area b/w which current flows through the medium.
· Does not need a corrosive medium	· Needs corrosive medium.
· Types include oxidation corrosion, liquid metal corrosion and corrosion by gases.	· Types include galvanic, pitting, stress and intergranular.
· Less prevailing	· More common.

GALVANIC SERIES.

Need for galvanic series:
The electrochemical series does not take passivity into account, or account for the corrosion behaviour of alloys.

The series prepared by studying the corrosion of metals and alloys in a given environment like sea water.

Increasing active ↓ Decreasing active

- Mg (Active: more anodic)
- Mg alloys.
- Zn
- Al
- Cd mild steel
- Cast iron
- Stainless steel
- :
- Ni
- Ag
- Ti
- Graphite
- Au
- Pt (passive: more cathodic)

* More detailed series in handbook *

CHARACTERISTICS OF GALVANIC SERIES

- Galvanic Series include both metals and alloys
- Metals and alloys are arranged in the increasing order of their corrosion resistance in seawater.
- Metals and alloys ~~are arranged in the increasing~~ ~~are~~ having almost same corrosion characteristics are grouped within a square bracket.
- Same metal can occupy two positions in the galvanic series: Eg Al occurs in two ~~po~~ (active and noble) positions in its active and passive state.

COMPARISON

ELECTROCHEMICAL SERIES	GALVANIC SERIES.
• EPs are measured by dipping pure metals in their salt soln of 1M conc without any oxide film.	• Series developed by studying corrosion of metals & alloys in unpolluted sea water, without oxide films.
• Position of a given metal is fixed	• The position of a metal may shift as it takes active and passive states.
• Gives no info regarding position of alloys.	• Alloys are included based on their corrosion behaviour
• Metals and non-metals included	• Metals and alloys included.

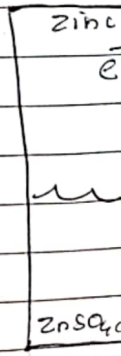
Similar

TYPES

- Galvanic
- Pitting
- Inter-g
- Stress

GALVAN

- Occurs
contact
- Anode:
Metal
- Cathode
Metal
- Example
  - Cu
  - Fe
  - Pb
  - A
  - St



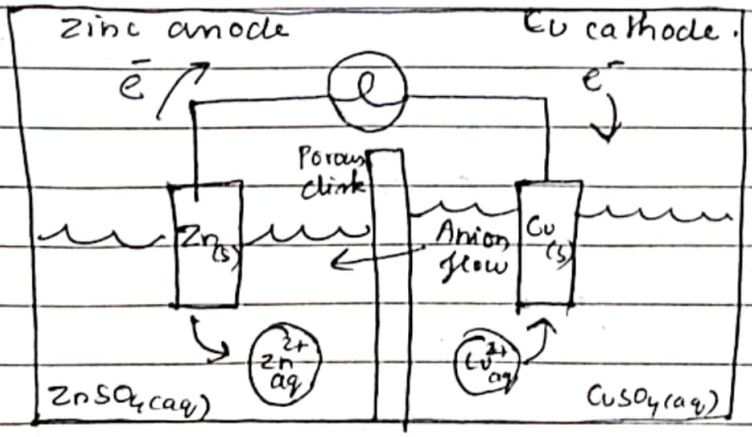
Similarity: In both, base metals are placed highes & noble metals lower in the series.

TYPES OF ~~CROSSI~~ CORROSION

- Galvanic corrosion
- Pitting corrosion.
- Inter-granular corrosion.
- Stress corrosion.

GALVANIC CORROSION

- Occurs when two dissimilar metals are in contact with an electrolyte.
- Anode: (gets corroded)
  Metal with lower standard electrode potential.
- Cathode:
  Metal with higher standard electrode potential.
- Examples:
  - Cu piping connected to steel tanks
  - Steel screws in a brass marine hardware.
  - Pb; Sb solder around Cu wire
  - A steel propeller shaft in a bronze bearing
  - Steel pipe connected to Cu plumbing.



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PITTING CORROSION

A pit maybe described as a cavity or hole with the surface diameter about the same length as or less than the depth.

Important reasons are:

- Surface roughness or non uniform finish
- Scratches or cut edges.
- Local straining of metal, due to non uniform stress
- Depositions of extraneous matter such as sand, scale, water drop, dust etc.