

Metal Activity Series

(How active is your metal?)

Explain the following statements with the aid of an equation:

1. Iron pipes buried in the ground can be protected from corrosion by connecting a sheet of magnesium metal to the pipeline.
2. Aluminium screws should not be used with iron materials.
3. Highly acidic foods should not be wrapped in aluminium foil.
4. When silver metal becomes tarnished it is coated with a compound of silver. The tarnish can be removed by wrapping the silver object in an aluminium foil and placing it in a pan of salty water. (Note: the salt is not involved in any chemical reaction.)
5. An alloy of silver that contains tin and some mercury can be used for tooth fillings. This alloy does not dissolve in the foods we eat. Explain why silver and mercury are good metals for tooth fillings.
6. Blocks of zinc or magnesium are attached to steel boat hulls, underground steel tanks, and steel pipelines to prevent the corrosion of the iron in the steel.
7. Dofasco, a major Canadian steel manufacturer, is the world leader in the use of a new corrosion prevention technique. It involves electroplating steel with a thin coating of a metal mixture called "Galvalume." What two metals, as suggested by the name, make up the Galvalume mixture? Explain why these two metals would be employed as an anti-corrosion technique.
8. Tin is used to coat and protect the inside of 'tin' cans, rather than using zinc to protect the tin cans.
9. Explain why sodium metal is not used for making coins. Indicate the metals that are used, and give reasons for choosing these metals.