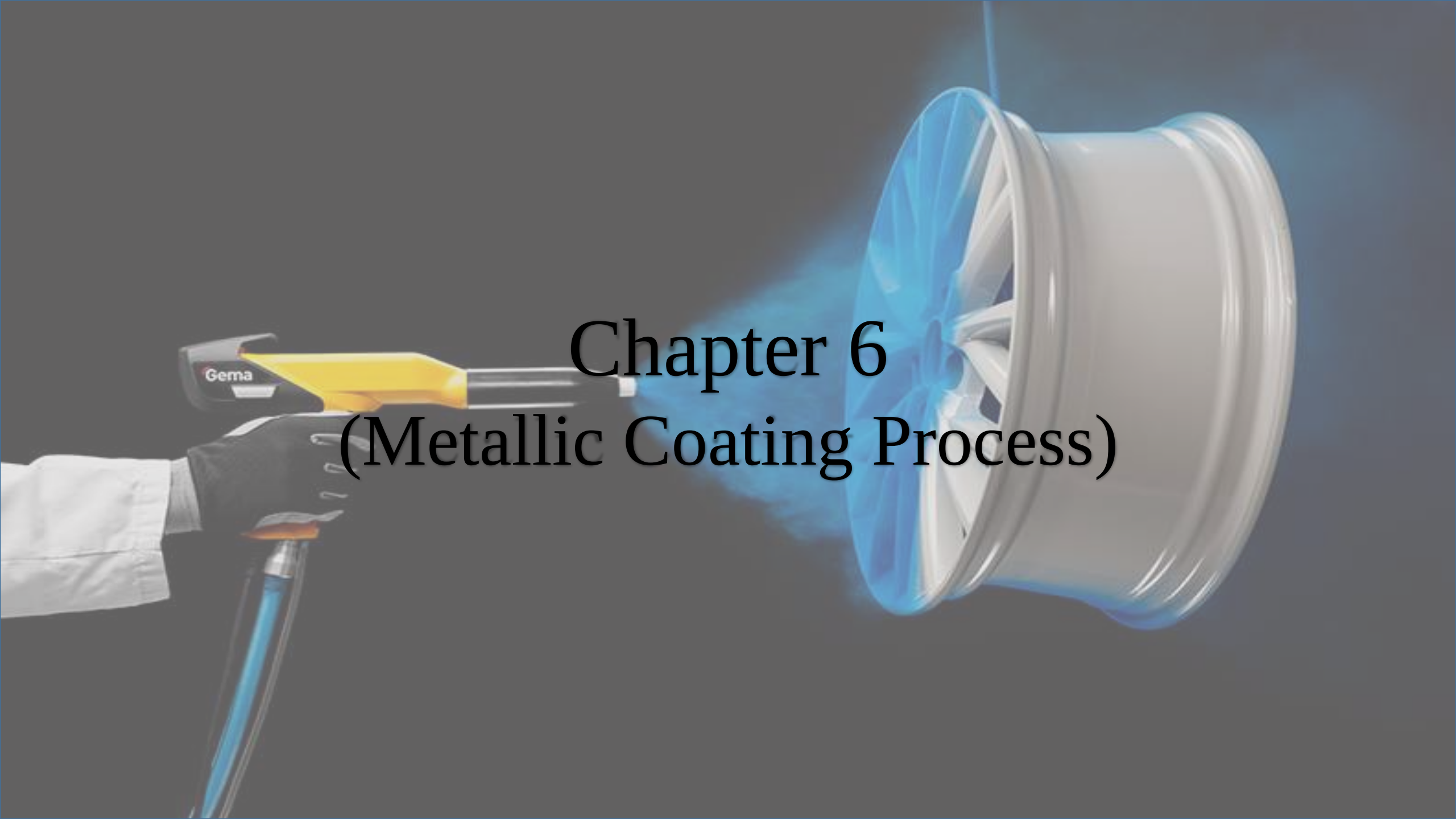


Chapter 6
(Metallic Coating Process)

Introduction

A coating is described as a formation (layer) that is either of a fluid or paste. It is applied by rolling, spraying and electroplating. It is done for better appearance and decorative purpose in addition to protect against corrosive agents.

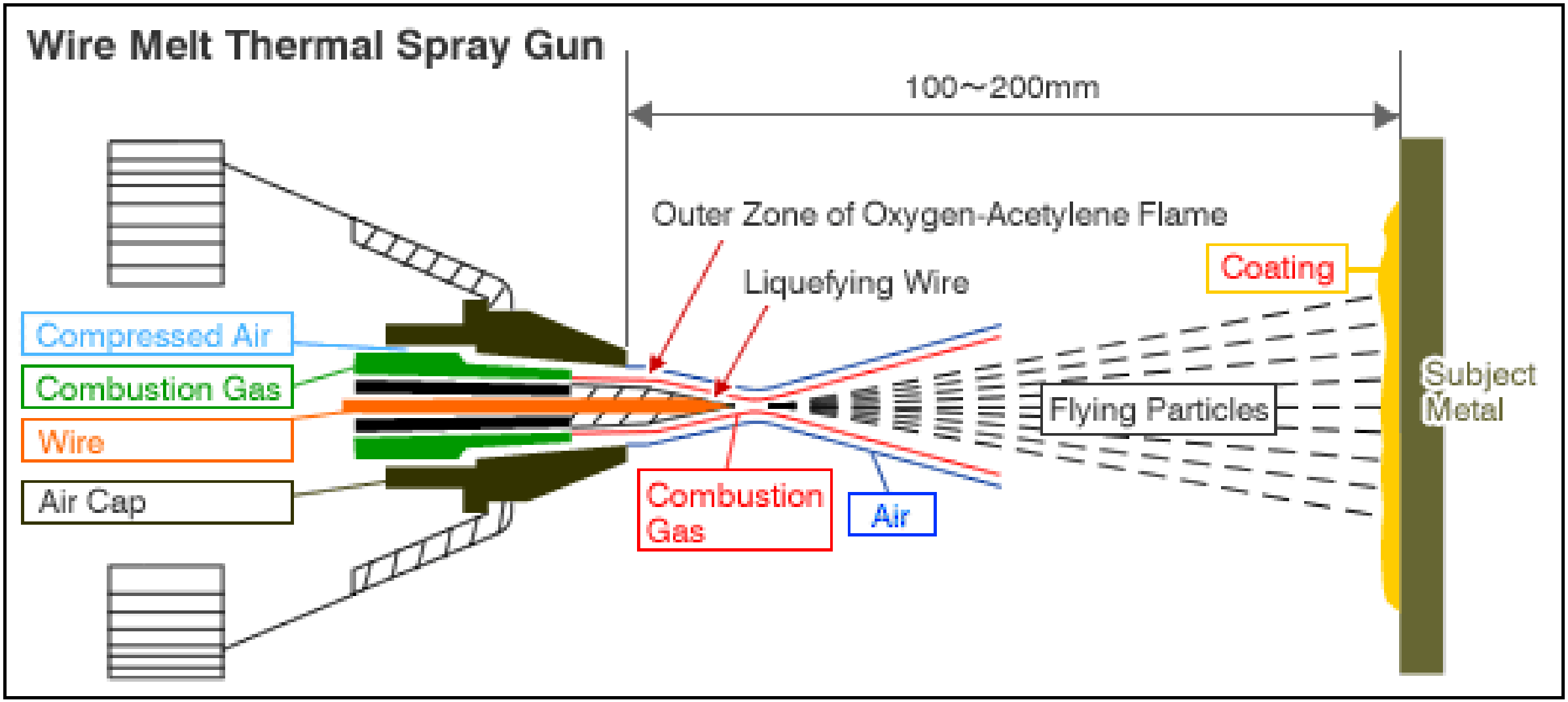
Cleaning of Surfaces

Chemical Methods: -

- Alkaline cleaning to remove oil and grease.
- Acid Pickling to remove oxide scale or flux residue.
- Solvent cleaning to remove oil, grease and dirt on metals

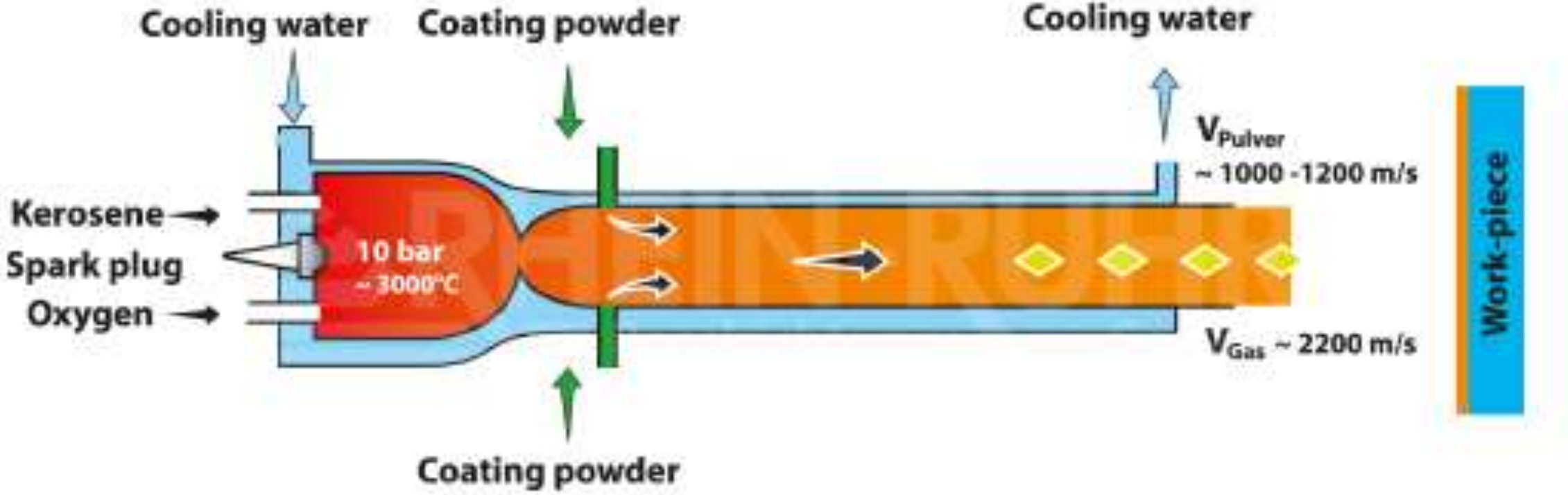
Mechanical Methods: - Abrasive blast cleaning, Buffing, polishing etc.

Metal Spraying-Wire Gun Process



Wire metal with melting point upto 3000 c can be used.

Metal Spraying-Powder metal Process



Low melting point metals such as Zinc, Tin, lead (230-450 c)

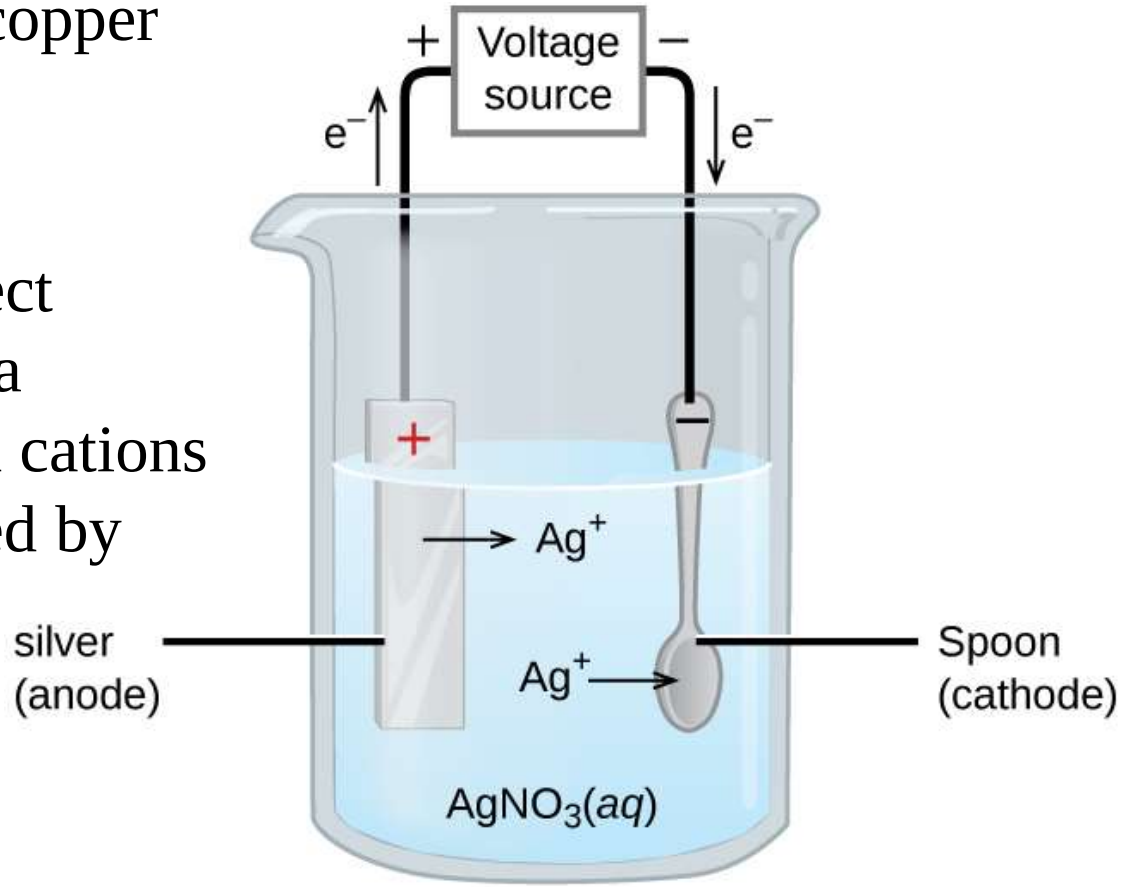
Metal Spraying-Application

i) Corrosion Protection
ii) Soldering surface
iii) Thermal conductivity
iv) Electrical conductivity

Electroplating

It is process to deposit superior metals like gold, silver and nickel etc. over inferior metals like iron and copper etc. It was invented by Faraday.

It work on the process of electrolysis i.e when direct current is passed between electrodes immersed in a solution containing metallic salt (electrolyte), then cations are attracted by cathode and the anions are attracted by anode.



Electroplating

Applications

LPG burners

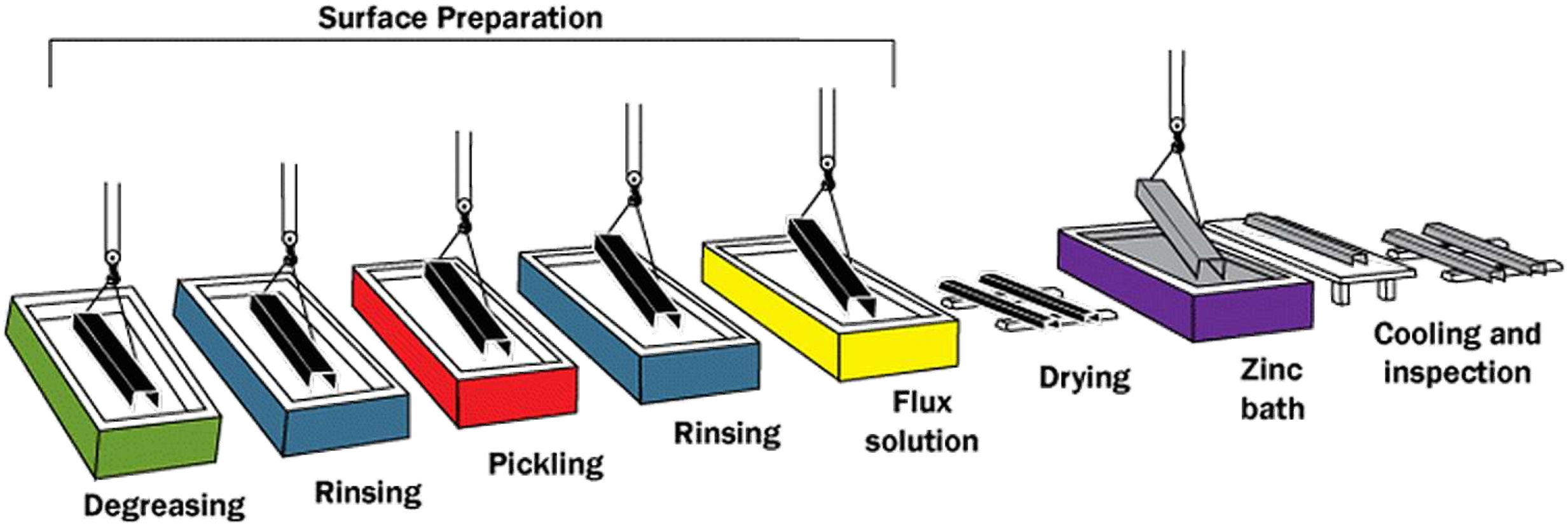
Tin Can

Jewelry

Hot Dipping

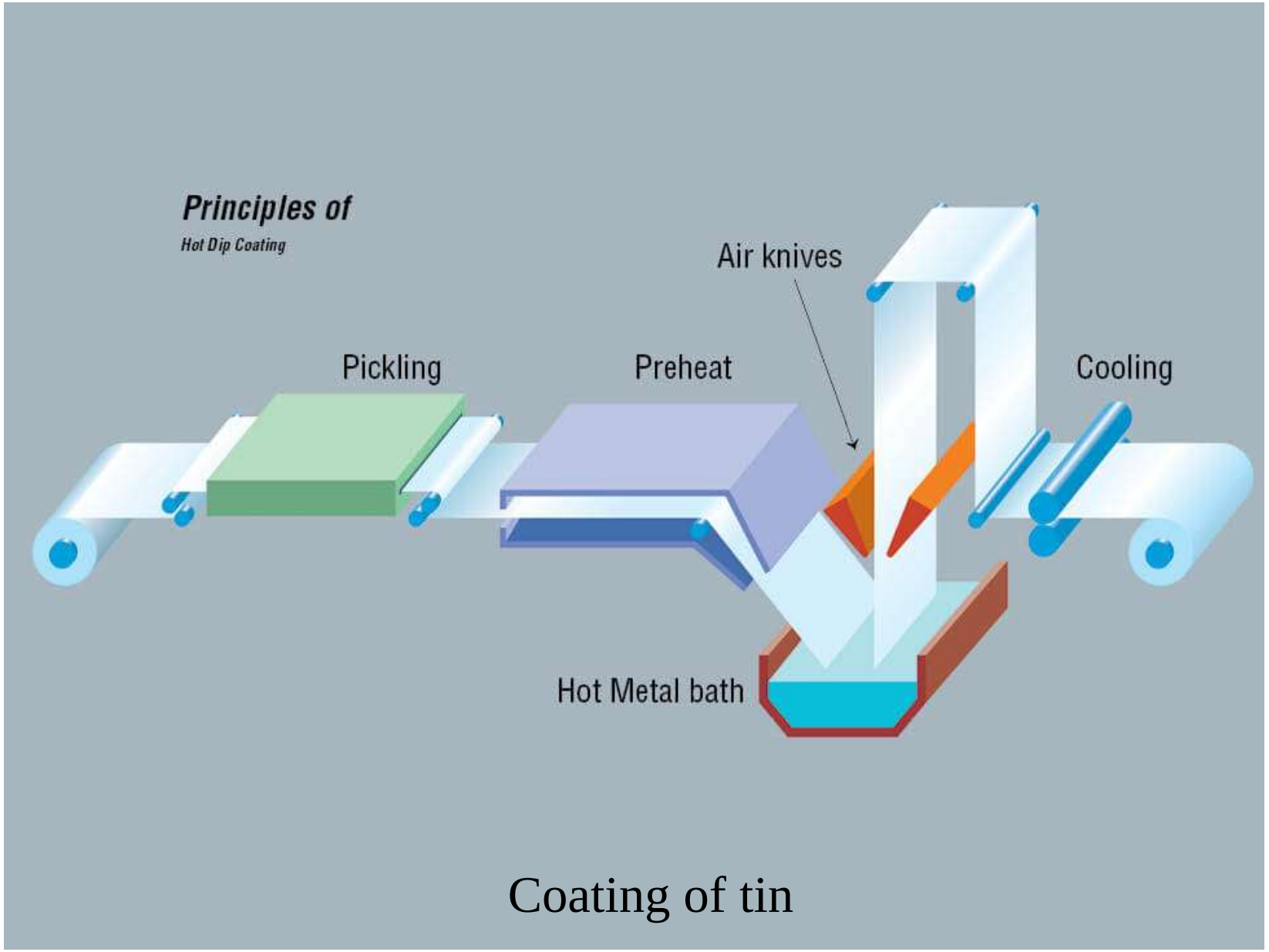
It is a rapid, inexpensive process in which a coating of corrosion resistant metal is formed onto a base metal. It used to apply coating of metals having low melting temperature such as zine, tin, lead or aluminum on iron, steel and copper which have relatively higher melting temperature.

Hot Dipping-Galvanizing



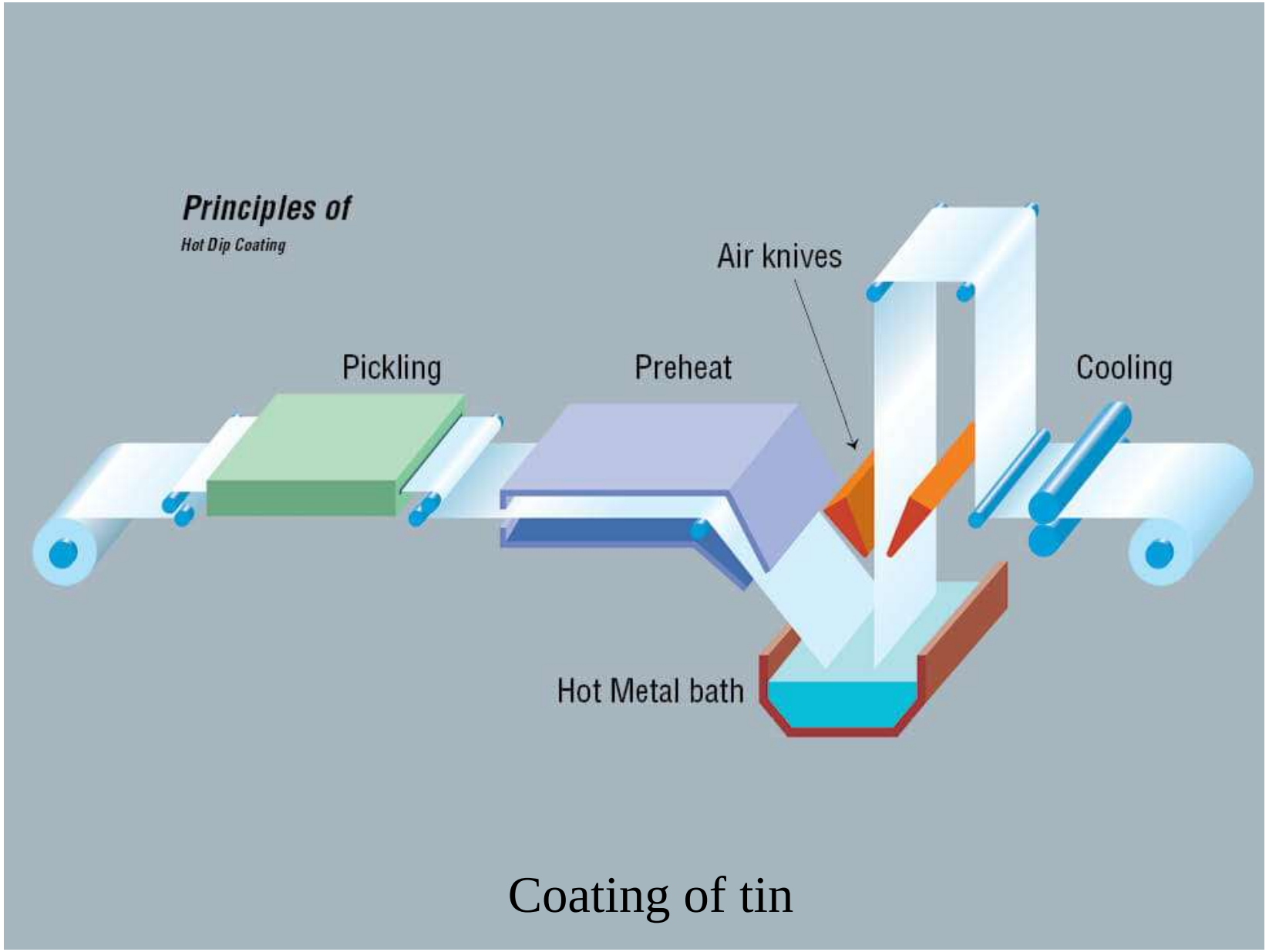
Coating of Zinc

Hot Dipping-Tin coating



Coating of tin

Hot Dipping- Anodizing



Coating of tin