



Standard Terminology Relating to Electroplating¹

This standard is issued under the fixed designation B374; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

These definitions correspond to interpretations as applied to electroplating and do not necessarily correspond to the definitions used in other fields.

1. Referenced Documents

1.1 ASTM Standards:²

B368 Test Method for Copper-Accelerated Acetic Acid-Salt Spray (Fog) Testing (CASS Test)

2. Terminology

abrasive blasting—a process for cleaning or finishing by means of an abrasive directed at high velocity against the work piece.

activator—in *diffusion coatings*, a chemical, usually a halide salt, that enters into a reaction with the source or master alloy, depositing the source on the substrate.

activation—elimination of a passive condition on a surface.

activity (ion)—the ion concentration corrected for deviations from ideal behavior. Concentration multiplied by activity coefficient.

addition agent—a material added in small quantities to a solution to modify its characteristics. It is usually added to a plating solution for the purpose of modifying the character of a deposit.

adhesion—the attractive force that exists between an electrodeposit and its substrate that can be measured as the force required to separate an electrodeposit and its substrate.

adhesion, practical, n —the force or work required to detach or remove a coating from the underlayer or substrate; it can be measured in terms of peel, pull, or shear strength as an experimentally determined quantity.

aluminizing—forming of an aluminum or aluminum alloy coating on a metal by hot dipping, hot spraying, or diffusion.

amorphous—noncrystalline, or devoid of regular structure.

ampere—the current that will deposit silver at the rate of 0.0011180 g/s. Current flowing at the rate of 1 C/s.

angstrom unit (Å)— 10^{-8} cm.

anion—a negatively-charged ion.

anode—the electrode in electrolysis, at which negative ions are discharged, positive ions are formed, or other oxidizing reactions occur.

anode corrosion—dissolution of anode metal by the electrochemical action in an electrolytic cell.

anode efficiency—current efficiency of a specified anodic process.

anode film—(1) the layer of solution in contact with the anode that differs in composition from that of the bulk of the solution. (2) The outer layer of the anode itself consisting of oxidation or reaction products of the anode metal.

anode polarization—See **polarization**.

anodic coating—a protective, decorative, or functional coating, formed by conversion of the surface of a metal in an electrolytic oxidation process.

anodizing—an electrolytic oxidation process in which the surface of a metal, when anodic, is converted to a coating having desirable protective, decorative, or functional properties.

¹ This terminology is under the jurisdiction of ASTM Committee B08 on Metallic and Inorganic Coatings and is the direct responsibility of Subcommittee B08.01 on Ancillary Activities.

Current edition approved April 1, 2011. Published April 2011. Originally approved in 1961. Last previous edition approved in 2006 as B374 – 06. DOI: 10.1520/B0374-06R10.

² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.