

White Paper: Plasma Technology for Surface Cleaning

Whilst our customers typically use plasma technology to improve their bonding, another use of plasma is ultrafine surface cleaning. Relyon Plasma, our sales partner, has produced an in-depth explanation of how plasma technology can clean surfaces, which we have added to our [library of technical resources](#).

You can read the White Paper on [Plasma Technology for Surface Cleaning](#), or discover more about [plasma surface treatment](#) in general. Our product specialists would be happy to help you determine if plasma technology can benefit your application.

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Plasma Technology for Surface Cleaning

by Relyon Plasma GmbH

Introduction

Ultrafine cleaning of surfaces with cold atmospheric pressure plasmas is a process of removing organic, inorganic and microbial surface contaminants, as well as strongly adhering dust particles. It is highly efficient and at the same time very gentle to the treated surface. At higher strength, it can remove weak surface boundary layers, cross-link surface molecules and even reduce hard metal oxides. Plasma cleaning promotes wettability and adhesion, enabling a wide array of industries to prepare surfaces for bonding, gluing, coating, printing and painting. Plasma cleaning is performed using air, or typical industrial gases including hydrogen, nitrogen and oxygen, and it avoids wet chemistry and expensive vacuum equipment, which can positively affect costs, safety and environmental impact. Fast processing speeds further facilitate numerous industrial applications.

Typical surface contaminants

Multiple layers of contaminants usually cover surfaces, even if the latter visually appears to be clean. Contaminants form naturally due to exposure to air. They include layers of oxides, water, various organic substances and dust. Furthermore, technological processes leave surfaces covered with oils, release agents, compounding ingredients, monomers and exuded low molecular weight species. Contaminants can greatly reduce the quality of adhesive bonding by introducing a weak intermediate layer. Moreover, their typically low wettability results in incomplete surface covering by the adhesive, further reducing bonding strength.

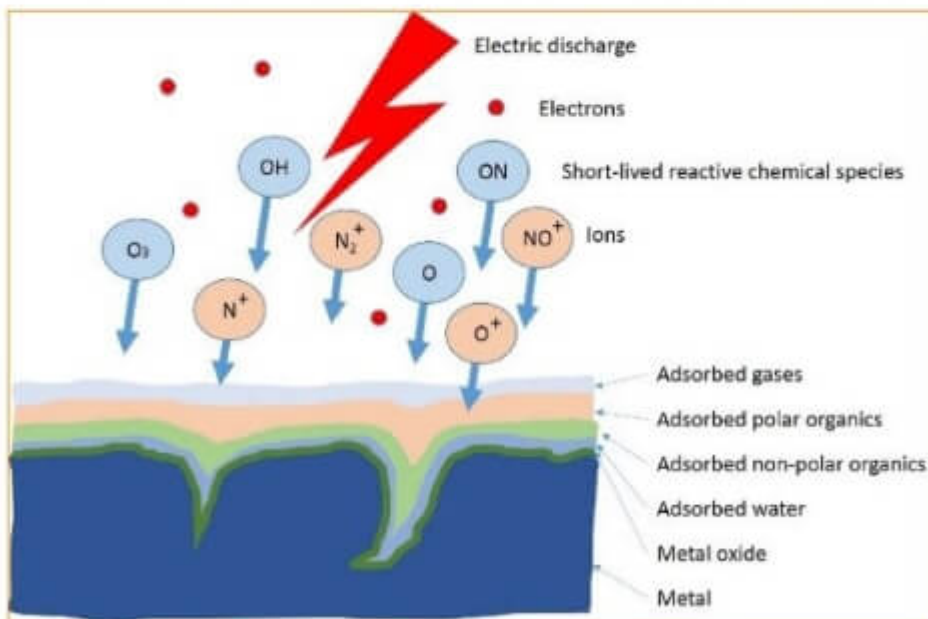


Figure 1 – Layers of contamination on a surface



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