

Enercon Plasma3™

Atmospheric Plasma Treatment



The introduction of gas chemistries at a controlled power level to a proprietary electrode produces a high density glow discharge that creates high surface energy.



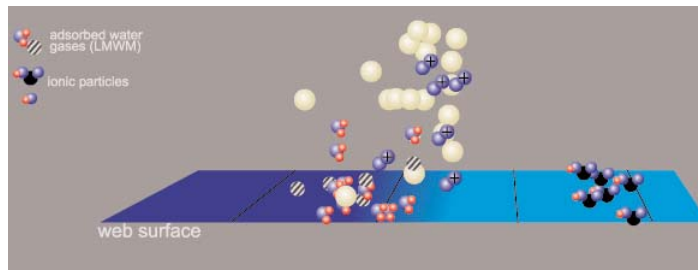
Plasma3™ treater for webs

Plasma3™ is the state-of-the-art atmospheric plasma surface treating solution for films, papers, foams, nonwovens, wovens, fibers, metals, and powders.

Add value with breakthrough technology

Plasma3™ 's ability to produce long lasting treatment results on materials that would be otherwise unresponsive is one of the technology's major advantages. However the ability to clean, etch and functionalize surfaces has made Plasma3™ a breakthrough solution for many industry leading firms.

How Plasma3™ works:



Reactive gases are diffused toward the surface under the influence of electrical fields. Low molecular weight materials such as water, absorbed gases and polymer fragments

are knocked off the surface to expose a clean, fresh surface. At the same time a percentage of the reactive components in plasma with sufficient energy bond to the freshly exposed surface, changing the chemistry of the surface and imparting the desired functionalities.

Enercon power generators and stations are designed to operate in a maximum ambient temperature of 40°C (104°F) @ 80% relative humidity, non-condensing.

enercon

surface treatment



Web/Sheet Applications

Films
Papers
Foams
Nonwovens
Wovens
Fibers
Metals
Powders

Treatment Benefits

Effective: Long-lasting treatment
Economic: Low operational costs
Convenient: Operates at atmospheric pressure without vacuum
Efficient: Less voltage requirements
Versatile: Treats wide range of materials

Effects

Electron Bombardment
Ion Bombardment
Excitation of gases
Crosslinking

www.enerconind.com/treating

Enercon Plasma3™ Surface Treating Systems

Why choose Enercon atmospheric plasma systems?

- Over 30 years application expertise
- Field proven design
- 100+ plasma installations
- Lab trials to 1.5m wide
- Impeccable reputation for reliability and quality
- Global perspective
- International support

Plasma3™ Notable Applications

Flexible Packaging



Flexible packaging converters utilizing aqueous inks on polyester-based structures may experience improvements in ink adhesion by employing APT-based surface treatment systems.

RFID Tags



Plasma3™ is removing printed conductive ink or stamped foil debris from the chip site for clean contact with the antennae leads. It also functionalizes the entire surface of the RFID inlay for adhesion to film and/or paper label layers.

Textile Functionalization



Plasma3 technology envelops and cleans the fibers of woven and nonwoven structures to significantly enhance their wettability, printability, dyeability and fiber capillarity (faster dye/ink uptake). Significant improvements in the ink adhesion, dyeing depth and colorfastness of textile webs, yarns and filaments have been achieved, along with the pre-sterilization of various medical-grade textiles.

Foams

Uniquely conducive to treating these materials, Plasma3 is increasing the surface tension of closed cell foams to improve lamination adhesion to films without pinholing.

Printed Circuit Boards and metal cleaning



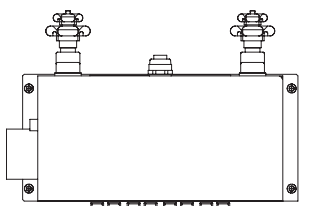
Cleans copper and stainless steel layer components of PCBs before liquid photoresist coating with ion and electron bombardment after the etching process. Plasma3 is removing rolling oils and other surface contaminations from aluminium and steel foils prior to slitting and rewinding. Activation of Plasma3™ gas chemistries combined with UV energy to create a chemical reaction with the surface contaminants, resulting in their volatilization and removal.

Introducing a new route to high performance surfaces:

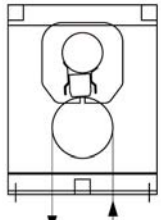
Atmospheric PECVD operates at atmospheric pressure and ambient temperature, allowing the use of a wide range of liquid precursors delivering high vapor coating rates onto flexible and rigid substrates. The process is currently being researched to deposit functionalities such as anti-fog, lubricity, corrosion resistance and electrical resistance.



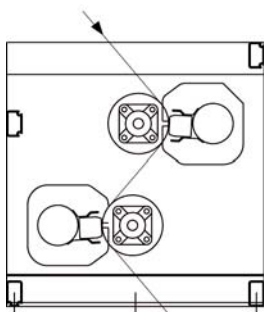
Standard configurations



Sheet treatment



Single sided web treatment



Two sided web treatment



Technology Partner
Sigma Technologies

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