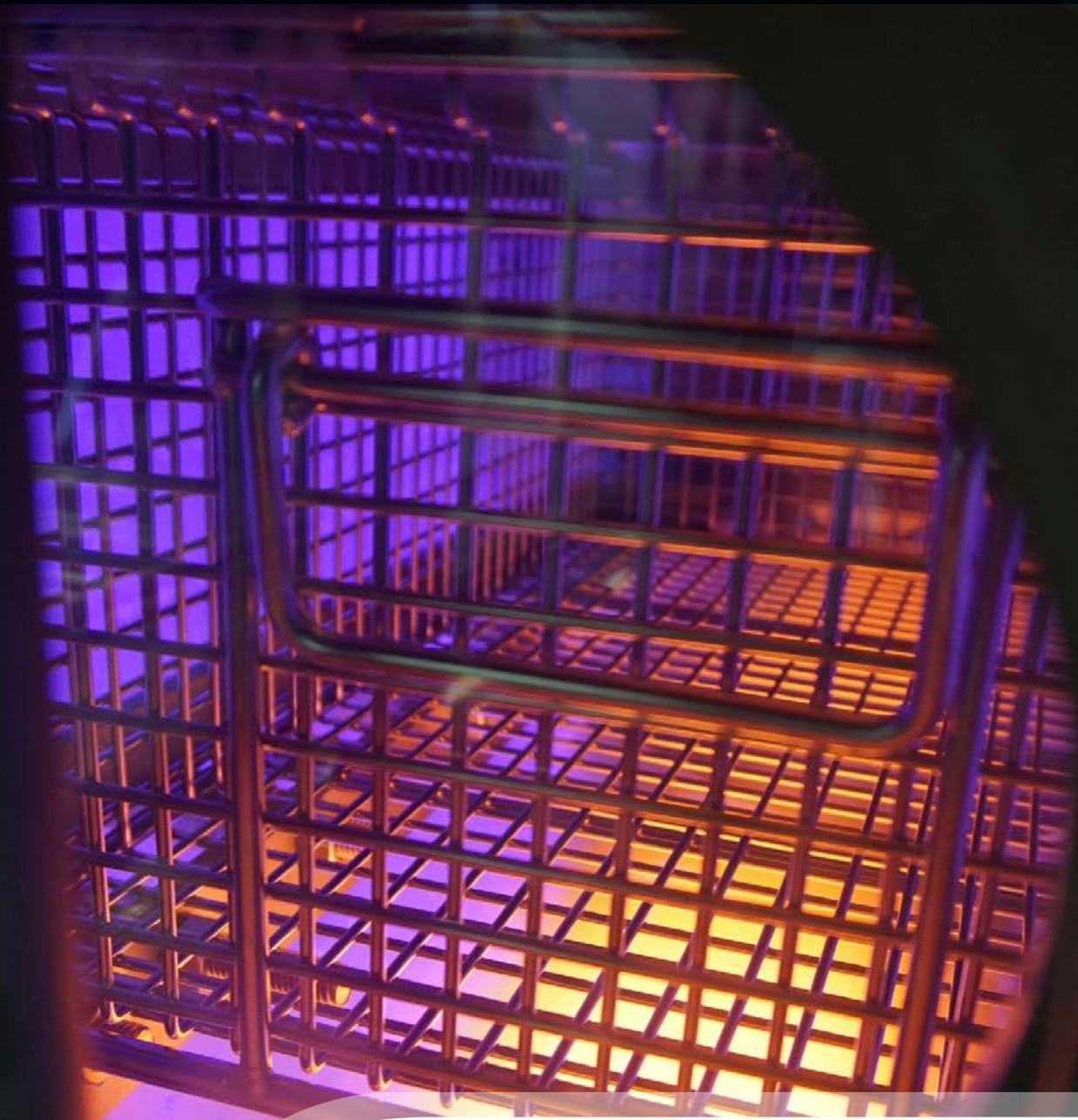


Filmic Cleanliness in Focus

EcoCore with Integrated Low Pressure Plasma



ECOCLEAN
technology that inspires

Ultra-fine degreasing by a combination cleaning process with integrated low pressure plasma treatment

One process step to filmic cleanliness

With the EcoCore with integrated low pressure plasma Ecoclean offers a combination cleaning technique merging wet chemical cleaning with a subsequent plasma cleaning step in one cleaning system. The technique is applicable for workpieces made of steel, aluminium, glass, ceramics as well as some other materials that are cleaned in bulk or arranged part carriers. Since virtually all components needed for this cleaning technology – e.g., vacuum, measuring and control equipment – are already in place in the manufacturer's wet chemical cleaning machines, the additional cost and engineering effort remains modest.

The advantages of the integrated plasma cleaning process in ultra-fine degreasing are substantial, on the other hand, including a high operating flexibility, reduced process times, low investment and operating costs, plus very compact equipment build.

The process

Cleaning is initially performed as usual by a solvent-based wet process, followed by vacuum drying of all workpieces. The work chamber is then rinsed and its internal pressure is reduced to less than 1 millibar, whereupon the process gas (e.g., filtered ambient air or oxygen) is introduced and the plasma is ignited. Due to excitation by the process gas, a plasma of high-energy ions and free electrons – plus other reactive particles – is thereby formed in the vacuum. Contaminants on the part surface, such as grease or oil residue, are chemically attacked and transformed into volatile compounds. At the same time, the plasma's UV radiation likewise exercises a cleaning effect, e.g., by breaking down long-chain hydrocarbons. The gaseous decomposition products of the plasma treatment are extracted from the work chamber by suction.

Thanks to the combination wet-process and plasma cleaning operation, the free surface energy that is key to achieving an optimum adhesion strength can be raised from 50 to 80 mN/m in one single process step.

Contact:

Ecoclean GmbH, Sales
T. +49 711 7006-190
E. sales.filderstadt@ecoclean-group.net

In recent years, the focus in many industries lay on removing particulate contaminants. Given new or modified production, joining and coating technologies as well as improved materials and combinations thereof, the elimination of film-type residue is gaining increasingly in importance.



+ One system & process step:
Wet chemical and plasma cleaning in one process step

+ Ultra-fine degreasing:
Plasma cleaning as an additional/final cleaning step

+ Cleaning quality:
Removal of very thin, filmic residues such as grease, oil, lubricants etc.

+ Cleanliness:
Dry as well as contact free cleaning for highest surface cleanliness

SBS ECOCLEAN GROUP

www.ecoclean-group.net