

## Manufacturer of Industrial Gas burner Systems

Aerogen is a specialist manufacturer of bespoke industrial gas burners and combustion systems. Supplying industry with solutions that offer benefits with both process and economical advantages. Aerogens scope reaches across a broad range of markets including automotive, converting, film, plastics & bakery. With a range of combustion technology and application experience to hand Aerogen offer world class systems with main applications that include:

**Flame Treating**

**Web treatment**

**Heating**

**Singeing**

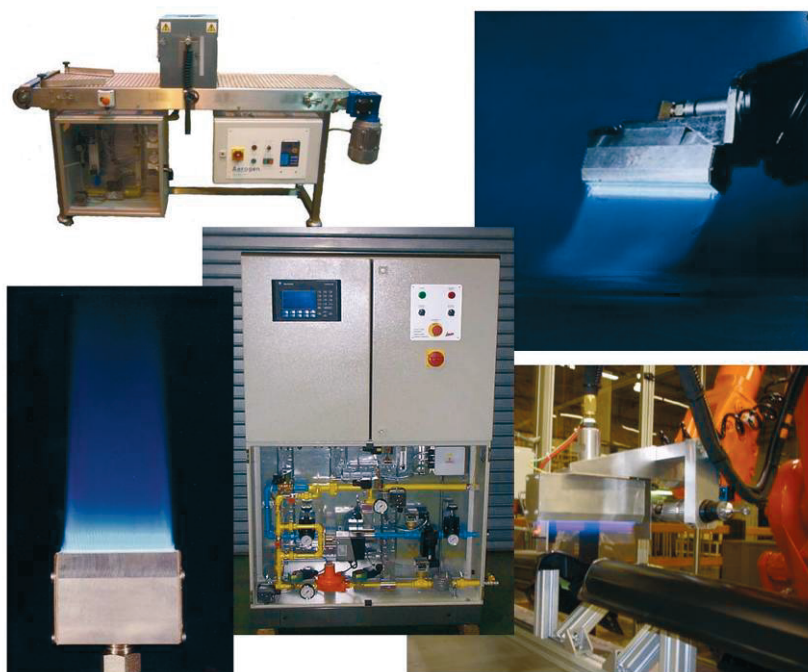
**Curing**

**Drying**

**Branding**

**Searing**

**Baking**



## Process & Economical Benefits

Implementing flame treatment will enhanced product quality and durability, leading to a reduction in raw materials, waste and overall manufacturing costs. Due to the efficient low cost gas consumption, savings in the production process can be measured immediately.

## Flame Treatment - Principal criteria

### Optimization of parameters is essential

The key benefit of surface treatment is enhanced adhesion and bonding qualities in a substrate,

### Benefits:

**Increased productivity**

**Reduced reject rate**

**Economical production**

### Main Advantage

- Improved product quality
- Durable adhesion
- Versatile treatment
- Reliable
- Repeatable
- Low Cost
- Low Maintenance
- No Primers

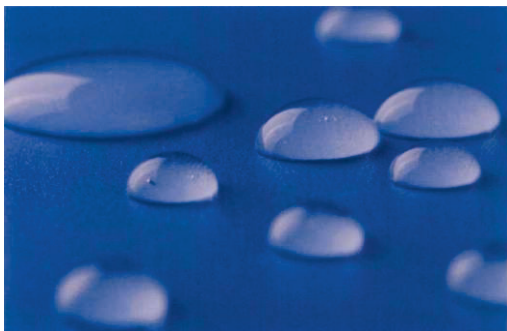


**The Aerogen control system** manages flame treatment in a way that is repeatable and reliable for industrial application the following parameters must be controlled.

- Burner output
- Air/Gas ratio (Excess oxygen)
- Dwell time
- Flame distance to the surface / Mechanical handling
- The substrate

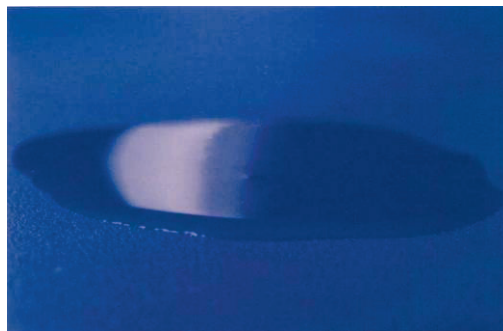
### No Treatment

Liquid is repelled from the surface



### Flame Treatment

Liquid is attracted to the surface



## Plastics

Flame treatment of plastics encompasses the infinite range of extruded or molded products. Different applications are covered within this market sector including: -bottles, containers, moldings, components, extruded pipes and cable covers etc. Flame treatment can be utilized to promote the adhesion of labels or print enhancing product quality. This is most beneficial for printing and labeling insuring that there is no damage to such applications from transit or handling of the product insuring a products visual integrity and "sale ability" is intact when reaching the supermarket shelf.

### Benefits:

**Improved print and label durability**

**Reduced reject rate**

**Enhanced product quality**



### Main Applications

- Bonding printing
- Labeling of containers
- Printing of:
- Caps
- Closures
- Bottles
- Packaging
- Containers
- Cable

### Main Advantage

- Versatile treatment
- Reliable
- Repeatable
- Low Cost
- Low Maintenance
- No Primers



## Automotive

With modern generation plastic components being increasingly used within car manufacture there is a substantial demand for specialty coatings to improve visual, versatile and durable qualities. However due to the poor adhesion characteristics of most plastics flame treatment can be implemented to insure adequate adhesion takes place.

### Benefits:

**Increase product quality**

**Reduce reject rates**

**Eliminate adhesion failures**

**Avoid costly solvent based primers**

**Dramatically reduce factory emissions**



### Main Applications

- Bumpers
- Instrument panels
- Spoilers
- Instrument panels
- Wheel Trims
- Mirror covers

### Main Advantages

- Increase of Bonding
- Fully automatic
- Repeatable results
- Low running costs, maintenance & Utility
- No adhesion promoting primers required



Flame treatment increases adhesion for painting, bonding, slushing and foaming and is commonly and increasingly used within vehicle manufacture. Aerogen technology is utilized on components used in almost every type of automotive vehicle in the market place today.



## Converting/Printing

The laminated carton is proving popular packaging technology, due to its flexibility as a packaging solution and also as an environmentally friendly design with materials coming from renewable resources. Aerogen's flame treating technology allows for the conditioning of the paper / carton board preparing its adhesion qualities prior to lamination. Such enhanced adhesion contributes to a product that which is used for the storage of liquids such as milk and fruit juices

### Benefits:

**Enhanced Carton integrity**

**Prevents de lamination**

**Eliminates pin holes in laminate thus preventing cross contamination**

**Enhanced adhesion**

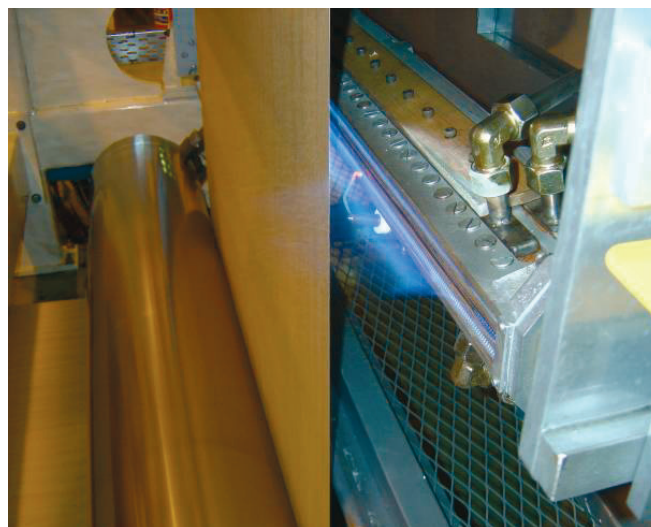
### Main Applications

- Paper & Carton Board
- Extrusion coating PE or Nylon

### Main Advantages

- Increased bonding of laminate to board
- 100% fiber tear result
- De - Wicking
- No Ozone emissions or hazardous by products
- Repeatability
- 

Reliability



## Film

Films such as BOPP can benefit from flame treatment where the final coating requirements demand high adhesion qualities in the substrate that other methods of surface treatment cannot offer. Such examples are high performance adhesive tapes requiring a low adhesive coating application on the "non sticky" side of the film. The flame enhances the adhesion of the film thus allowing for the low adhesion coating to be applied that would otherwise not be compatible.

### Benefits:

### High adhesion properties for printing and coating

#### Main Applications

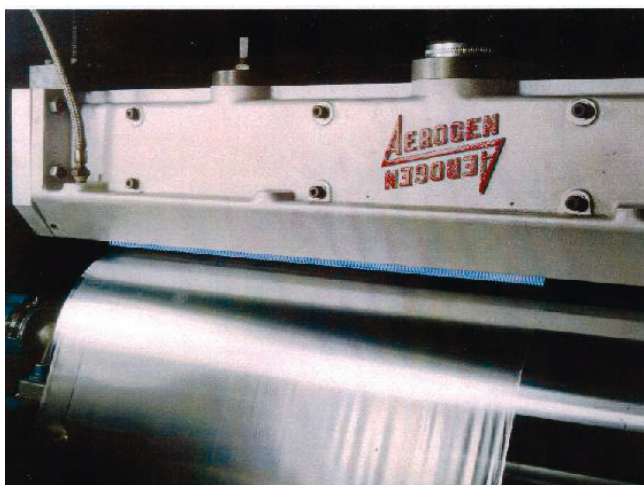
- BOPP
- OPP

#### Main Advantage

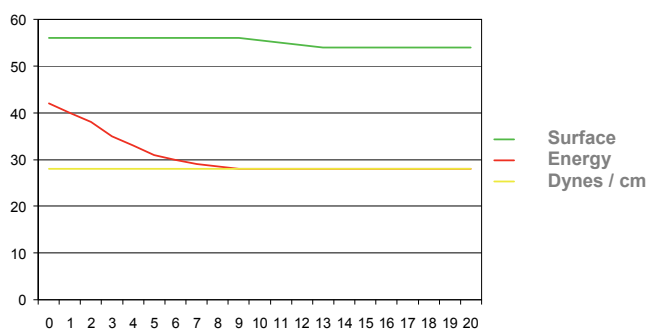
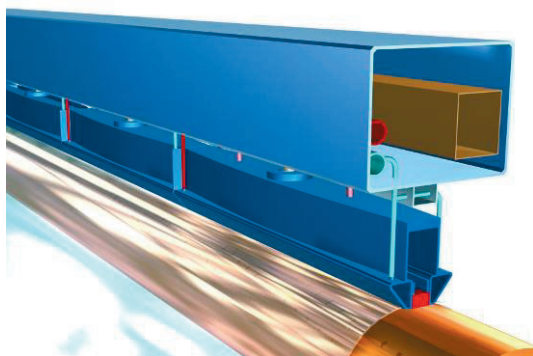
- Offers high treatment levels
- No Backside Treatment
- No Decay of Treatment
- No Pin holing
- No Hazardous emissions

#### Our Technology

- Patented burners
- Flame Plasma
- Automatic flame controls



Film for printing such as Gift wrapping, Confectionary, Pasta, Snack food, Collations packs and hardware & stationary. Other applications include adhesive tape and metalized film.



## Flame Polishing

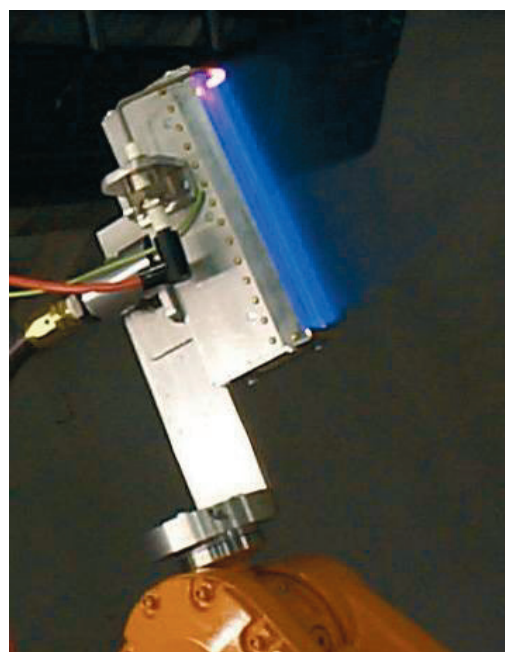
Flame polishing removes burs and flash from injection molded components. The flame rounds off edges without damaging the product. Examples include Lingerie coat hangers to prevent snagging. Automotive moldings can also benefit, as removal of burs and flash with the Aerogen flame can prevent paint accumulation to ensure smooth surface finishes.

### Benefits:

**Removal of unwanted burs & flash**

**Smoothing of edges**

**Gloss surface finish**



### Main Applications

- Injection Molded components

### Main Advantages

- Smooth surface finishes
- High quality
- Repeatable results
- Reliability
- Prevents paint accumulation on mold seams

## Anti Flecking

Anti Flecking of sheet metal such as tin plate is implemented to prepare the surface prior to further coating. The process is implemented in many coating lines and the flame removes any forming oil or grease present on the surface of the substrate preparing the surface in a way that promotes adhesion and thus coating durability.

The Anti flecking burner system is usually situated on the coating line prior the size coating being applied, this well proven technology ensures that spot marks are reduced to a minimum and aid consistent coating resulting in high quality visual results.

### Benefits:

#### Removal of forming oil & Grease

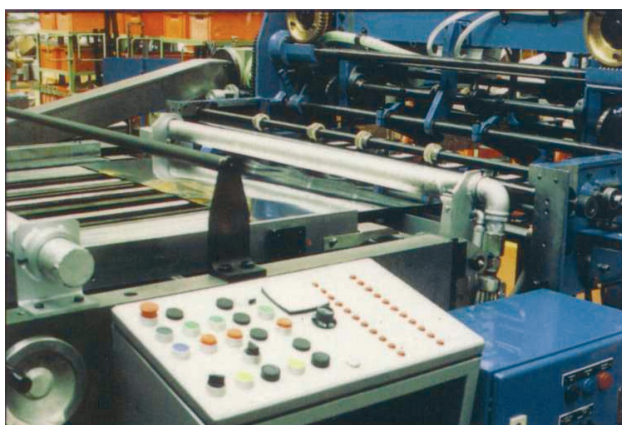
#### Pre warming of surface

#### Main Applications

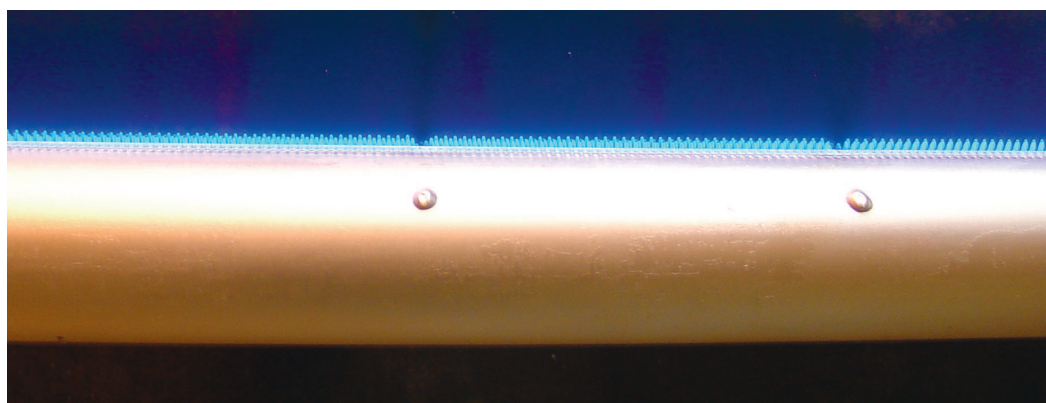
- Tin, aluminum, steel sheet

#### Main Advantages

- Increased coating durability
- Improved appearance of print
- No hazardous emissions
- Repeatability
- Reliability



#### Anti Flecking flame profile:





## Technology & Services

### Technology

Aerogen bespoke combustion technology is proven to be a world leader in solutions for a wide range of industrial processes. Implementation of gas burner technology will always offer both quality and economical advantages to appropriate applications. Further areas Aerogen specialise in are as follows:

### Air Heating

High performance heaters, heat recuperates special burners and noxious fume incinerators that give accurate control and full systems interfacing for the supply and application of processed hot air. Aerogen concentrates on the production of tailor-made systems (for example, very high turndown ratios) and specializes in satisfying non-standard technical requirements.

### Food – Bakery / Branding / Searing

Aerogen's **Bakery** burners and baking systems combine the wide experiences that we have gained in the manufacture of industrial process heating plants with the development of food-oven burner equipment. Applications include bread, wafer and biscuit ovens. Greater fuel efficiency, increased productivity and improved product quality and consistency being the result.

Other food applications include: **Branding** burners for BBQ strips on burgers, steaks and other meat products. **Searing** burners for fast cooking applications on meat products.

### Metal Sheet & Can Making

Aerogen supply **Metal Sheet** "Anti Flecking" burner technology for the removal of grease and forming oil from sheet tin plate prior to coating for applications such as aerosols cans and baby food cans.

Aerogen also supply patented side-striped curing burner system technology to handle the whole process of curing the weld lacquer on the seams of the modern three-piece **Can Making** applications. This unique heating system provides a highly versatile temperature profile solution.

### Industrial Gas Burners and Control components

Aerogen supply bespoke industrial gas burners and all associated components such as valves mixers flame relays electrodes, specializing in both manufacture and sourcing of quality gas controls. Contact us with you requirement.

### Textiles...

Nozzle Mix Burners, smooth flame burners, radiant burner, immersion tube firing. Suitable for singing applications requiring de wicking.

### High Temperature or large scale

Bespoke design and manufacture of large industrial; gas burner systems and also conversion and updating of existing plant, oven /furnace conversion with the facility for Technical improvements to all process heating installations.

### General Combustion Services

Control engineering, plant servicing and commissioning, plant design and installation, energy efficiency surveys.

### Research and development

Customer in-house trials, laboratory trials, continuous product and application development.

## Reference

*EUROPE – AMERICA'S - ASIA - AUSTRALIA -  
AFRICA - MIDDLE EAST*

3M Company  
ABB Flexible Automation  
Allergran Pharmaceuticals  
Allied Bakeries  
Apex Machine  
Birdseye Walls  
BMW  
Borealis International  
Britax Winguard  
British Steel Corp.  
Crown Packaging  
Chubbfire  
CSIRO  
Colgate Palmolive  
Continental Coffee  
Crown  
Daimler Chrysler  
Davis Standard  
Decoma  
Ecomold  
Electra Paint  
Fanuc Robotics  
Faurecia  
Ford  
Garbuio Design  
General Motors  
Golden Wonder  
Gillette Braun  
H.J. Heinz Co  
Hayden Drysys  
Honda  
International Automotive Components  
Isosport  
Johnson Controls

Kia Motors  
Lever Faberge  
Linpac  
L G Harris  
Magna Kansai  
Pedigree Masterfoods  
Pirelli Cables  
Pilkington Glass  
Pipeline Induction Heat  
Plastic Omnium  
Polytype  
Reiter Automotive  
Rotomec  
Sasib  
SC Johnson  
SIG Combibloc  
Stora Enso  
T.H.Dixon  
Taikisha  
Tetra Pak  
Toyota  
Tyco Electronics  
UDV  
United Biscuits  
Universal Robina Corp  
Van Leer  
Valeo  
Visteon  
Volkswagen  
Walkers Crisps  
Warburton's