Electrostatic Technology

Gema Food Coating
Our core technologies

**Powder Flow Control**
Our advanced pumps coupled with precise digital control technology ensure precise and repeatable flow of a wide variety of dry powder materials.

**Electrostatic Application**
The powder particles are charged to improve the coating deposition and ensure a long lasting adhesion on the coated pieces.

**Powder Containment**
The application process takes place in a depressurized booth, designed specifically to prevent powder from escaping into the process environment.
**Electrostatic Application Technology**

**Traditional gravity coating systems** rely purely on gravity to dispense the coating onto the piece.

- **No attraction** to the piece results in poor transfer efficiency and ambient contamination.
- Lack of control results in uneven coating application.

**Electrostatic Guns** apply an electric charge to the powder particles that are sprayed towards the piece.

- The high voltage electrode creates an electric field that guides the powder to the piece.
- The charged powder particles are attracted by the pieces to coat and remain attached to them also after the application.
- The electric field ensures a more uniform coating.

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Higher Transfer Efficiency

- The Electrostatic Application offers a much higher transfer efficiency in comparison to traditional gravity systems.
- This means that more powder is applied on the pieces to be coated and less powder is wasted in the ambient.
- The reduced loss of powder material represents a significant cost saving.
- The reduction of powder dispersion in the ambient allows a strong reduction of cleaning and sanitization time.
The electrostatic charges create a strong attraction between the powder particles and the pieces to be coated.

Osmotic attraction gradually replaces the electrostatic attraction and maintains an excellent coating adhesion to the pieces post coating application.

Powder particles remain attached and in place on the pieces during the following process steps (transportation, baking, packaging, etc.).

The reduction of powder escape and migration into the ambient results in a significant reduction of cleaning and maintenance activities throughout the processing plant.

The improved adhesion of the coating on the pieces grants a much better product quality and product consistency for the end-user.
Main Customer Benefits

**Powder savings**
- More powder on the products and less overspray and airborne powder migration during application and in the following process steps

**Reduced cleaning and maintenance**
- Maintenance costs, failures and downtime caused by powder dispersion are minimized in all the process steps following the application thanks to the excellent electrostatic adhesion of the powder to the pieces

**Improved products quality**
- A more uniform coating layer makes the products aesthetically more appealing and tasting better
- The electrostatic adhesion ensures that the products maintain their perfect uniform coating ready for end-user consumption
- Electrostatic application allows customers to create new appealing products that were not possible with traditional food coating technologies
Precise dosing of the ingredients

- A more precise control of the amount of ingredients allows to better satisfy conscious customers’ requirements and to meet stringent labelling regulations (salt / sodium content, etc.)

New products / new processes opportunities

- Electrostatic Application is a new break-through technology in the food processing market.
- Our customers can now change and re-think traditional manufacturing processes and achieve significant savings, repeatable results and quality improvements
- Our customers can now create new products – not possible with the current traditional processes