



PACKAGING WHAT CAN'T BE TOUCHED



Enabling Water-Soluble Agrochemical Packaging at Pioneer Pesticide

In the agrochemical and pesticide industry, packaging is not just about containment, it is about **safety, accuracy, compliance, and responsibility**. **Water-soluble laminate packaging** has emerged as one of the most advanced and sustainable solutions available today.

Pioneer Pesticides Pvt. Ltd., a forward-thinking agrochemical manufacturer, took a decisive step towards this innovation. However, adopting water-soluble packaging is not a simple material change, it is a **complex engineering challenge**.

To make this transition reliable and scalable, Pioneer partnered with VT Corp, leveraging its deep application knowledge and decades of packaging engineering expertise.

ABOUT PIONEER PESTICIDES

Pioneer Pesticides Pvt. Ltd. is an **ISO 9001 & 14001 Company** which was promoted and established in 1995 by Sh. Harbans Singh Joson. It stands out as **one of the leading agrochemical companies** in the country. Its factories and laboratories are equipped with the state of the art machines and testing instruments. All the units are duly certified ISO units. Most of the popular products of the company are duly ISI marked.

CUSTOMER SNAPSHOT

Impact reports cater to a variety of audiences, so it's best to adjust them accordingly. First, identify your target reader. Next, you can shift your focus on what they need to know.

COMPANY

Pioneer Pesticides Pvt. Ltd.

INDUSTRY

Agrochemicals & Pesticides

APPLICATION

Packing of agrochemical powders

PACKAGING MATERIALS

Water-soluble laminate & heat-sealable laminated films

POUCH TYPE

Water-soluble laminate & heat-sealable laminated films

PACK SIZES

20 g, 50 g, 100 g (with scope for higher SKUs)

THE CORE CHALLENGE: PACKAGING A FILM THAT DISSOLVES

Water-soluble laminate offers clear benefits — reduced plastic usage, zero residue handling. However, it is one of the most demanding materials to run on a packaging line.

Pioneer faced multiple challenges simultaneously:

- Extreme sensitivity to moisture, static charge, and film tension
- Risk of seal inconsistency due to narrow thermal tolerance
- Requirement for high dosing accuracy, especially in low-gram SKUs
- Need to process both water-soluble and conventional laminate films on one machine
- Maintaining production speeds without compromising pack integrity

The requirement was clear:

A PURPOSE-ENGINEERED SOLUTION — NOT A STANDARD MACHINE ADAPTATION.

VT CORP'S FIRST **APPROACH**

VT Corp proposed a Vertical Form Fill Seal Machine – Model VTC 600(E) with Servo Auger Filler, engineered specifically for agrochemical powders and water-soluble laminate packaging.

With over 60+ years of manufacturing experience and 6,000+ installations globally, VT Corp focused on designing a solution that ensures:

- Material protection
- Sealing reliability
- Precision dosing
- Operator safety
- Long-term operational stability

Every subsystem was configured keeping the material behaviour and application risk at the centre.



VFFS MACHINE - MODEL VTC 600(E)



Fully automatic Vertical Form Fill Seal machine



Designed for pillow pouch formats



Resonance-free, heavy-duty MS structure with hygienic housing



Enclosed drive elements for dust protection



Interlocked safety guards and ergonomic access



PLC-based control with 7" colour HMI



Memory for multiple recipes enabling quick changeovers



ENHANCEMENTS FOR WATER-SOLUBLE FILM

1 Motorized Film Unwinding Station
Maintains optimum and uniform film tension for sensitive, low-strength films

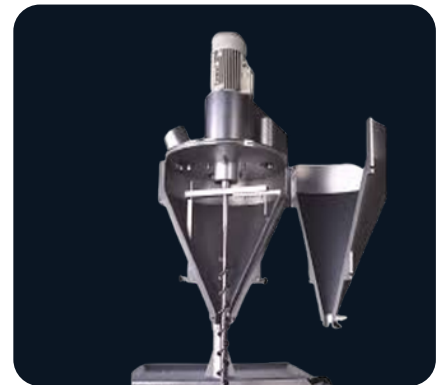
2 Static Charge Eliminator
Prevents film sticking, powder adhesion, and handling instability

3 Dedicated Sealing Systems
Separate horizontal sealing dies for water-soluble and laminated films PID-controlled temperature regulation for precise sealing

4 Automatic Web Tracking & Photo Mark Sensor
Ensures accurate print registration and pouch cutting

SERVO AUGER FILLER SYSTEM

- Servo-driven auger filler with IP65 enclosure
- Separate auger screws and tubes optimized for varying bulk densities
- Continuous / cyclic mixing for uniform product flow
- Product level sensors for consistent dosing
- All product contact parts manufactured in SS 304



DEDICATED FORMING SETS FOR :-

20 G WATER-SOLUBLE LAMINATE
50 G & 100 G LAMINATED FILM
Fin seal and lap seal options
Quick, tool-less changeover capability
One machine platform supporting multiple SKUs and materials

OUTPUT SPEED

- 100 g: 45-50 pouches/min
- 50 g: 50-55 pouches/min
- 20 g (water-soluble): 55-60 pouches/min

FILLING ACCURACY (SIGMA 1)

- 100 g & 50 g: $\pm 1-1.5$ g
- 20 g water-soluble: $\pm 0.5-1$ g

NOT JUST BUILT TO RUN - BUILT TO PERFORM



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