FORMUQUISA

Formulation Capabilities

Granular Formulations – GR – WG

The granulation process consists of atomizing liquids onto technical materials and/or inert carriers to ensure product quality and optimal field performance for the grower.

1. The subprocesses involved are:

a. Screening to separate particle sizes and remove impurities from the carrier material to be impregnated.
b. Automatic weight control to ensure finished product content accuracy and quality compliance.
c. Liquid atomization with weight control to guarantee the specified formulation ratio.
d. Additional dosing chamber for incorporating small quantities of solids that serve specific functions such as desiccants, anti-caking agents, or other functional additives.
e. Blending and transfer to holding bins (surge hoppers) prior to packaging.

The most common products manufactured on this production line are nematicides and insecticides.

The most commonly used inert carriers are pumice stone and extruded cellulose. There are two production lines with capacities of 2,000 kg/hour and 825 kg/hour, respectively.

Liquid Fertilizers

Liquid fertilizers and liquid biostimulants are formulated in stainless steel jacketed tanks, designed with heating and cooling capabilities depending on the thermal energy generated during the formulation process.

Chemical reactions and/or dilutions are carried out in two reactors with a high level of precision, ensuring product quality and safety for both personnel and the environment. These reactors are equipped with the following features:

1. Weight control through load cells, ensuring accurate dosing of raw materials.
Bottom-fed addition of liquid acids, allowing controlled incorporation into the lower section of the reactor for enhanced safety and process stability.

Formulation Capabilities

2. Screw conveyor system to ensure that effervescence does not pose any risk to personnel.

3. Vacuum system for extracting generated vapors and gases.

4. Gas and vapor scrubbing and neutralization system to prevent environmental contamination.

5. Heating and/or cooling system through the tank jacket, adjusted according to the energy released by the formulation being produced.

6. Bulk storage capacity of up to 178,000 liters.

Extensive knowledge and experience in developing a wide range of formulations for multiple crops, supplying nutrients such as nitrogen, phosphorus, potassium, magnesium, sulfur, calcium, boron, zinc, manganese, iron, molybdenum, and copper, as well as organic acids, seaweed extracts, amino acids, phosphites, and other specialty inputs.

The reactors have capacities of 20,000 liters and 4,000 liters, respectively.

Flowable Suspensions – SC – OD

Suspension concentrates (SC) and oil dispersions (OD) are produced by milling a technical active ingredient through bead mills to achieve a particle size fine enough to ensure long-term stability. With the addition of wetting agents, dispersants, and rheology modifiers, the final product—homogenized in a Cowles high-speed disperser—achieves physical stability for a minimum of two years.

This production line manufactures fungicides, fertilizers, herbicides (in a separate, dedicated area and equipment), UV protectants, among other products.

The company operates six units with capacities ranging from 1,000 to 2,000 liters each. Depending on the required particle size distribution, the milling process may take between 1 and 6 hours per batch.

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Powders – SP – WP – DP

The production of solid formulations involves initially blending fine solid materials, followed by a dry milling process to achieve a particle size below 75 microns. The material is then pneumatically transferred under vacuum to a secondary mixer to obtain a homogeneous final product.

During this process, adjuvant agents are incorporated to ensure rapid wetting and proper suspensibility when the product is diluted and applied in the field, thereby maximizing performance and biological efficacy in the crop.

This production line manufactures insecticides and fungicides.

To achieve the desired active ingredient concentration and formulation balance, inert carriers such as diatomaceous earth and/or talc are used.

Emulsifiable Concentrates – EC

Emulsifiable concentrates (EC) are liquid formulations in which active ingredients are dissolved in non-polar solvents and incorporate emulsifying agents specifically selected for each formulation.

Emulsion formation occurs when the grower dilutes the product in water at the recommended rate. The stability of the resulting emulsion is guaranteed by FQ for a minimum of 24 hours under proper conditions of use.

This production line manufactures insecticides–nematicides and herbicides (in a dedicated area with separate equipment).

Formulation Capabilities

Quality Control

To ensure product quality and prevent contamination, the company is certified under the ISO 9001 Quality Management System and the ISO 14001 Environmental Management System.

The Quality Control laboratory is equipped with modern instrumentation and staffed by qualified professionals who perform equipment cleanliness verification prior to the start of production, ensuring the prevention of cross-contamination.

The Quality Control team is also responsible for approving and releasing both in-process and finished products, guaranteeing that only compliant materials reach the grower.