

HL3 System

Removal of geosmin and undesirable compounds from musts and wines

INTRODUCTION

Adsorption resins are a tool for reducing and removing certain moldy or earthy organoleptic defects, and their use for the removal of geosmin from musts and wines is permitted under current regulations.

Unlike ion-exchange resins, adsorbent resins do not exchange components with the treated product; rather, they act through the selective adsorption of specific compounds.

Following a research project conducted by AGROVIN's R&D Department, a highly porous, highly selective adsorbent resin has been selected for incorporation into the HL3 system.

During treatment, the must or wine passes through the adsorbent resins, which selectively retain certain compounds. Once the adsorption stage is complete, the system performs a cleaning and desorption process that prepares the resins for subsequent operating cycles.

FEATURES

- An automated, user-friendly process that requires no specialized knowledge on the part of the user.
- A standalone system with adjustable flow rates and processing times based on the product and the oenological objective.
- Traceability of the treated product and the solutions used during the various stages.
- A compact design that requires no special installation or auxiliary equipment.

APPLICATIONS

- Reduction or elimination of geosmin, a compound that causes musty-earthy organoleptic defects.
- Reduction of C6-type plant compounds.
- Reduction of oxidized and potentially oxidizable polyphenolic compounds in musts and wines.
- Prevention of the "light-struck" flavor in white wines due to its ability to adsorb riboflavin.

CONSTRUCTION FEATURES

- Column with a food-grade polystyrene interior and a fiberglass exterior.
- Stainless steel frame and housing with an epoxy coating resistant to strong acids and bases.

IMPORTANT NOTE: The HL3 system must be used in accordance with current regulations. AGROVIN disclaims any liability arising from use that does not comply with applicable regulations.

- Centrifugal process pump with a variable frequency drive.
- 17-inch IP65 touchscreen PC panel with control software.
- 2 pneumatic pumps for dosing solutions, made of corrosion-resistant material.
- 2 in-line electronic pH sensors for automatic cleaning and regeneration management.
- Electronic flow meter, 1–5 V pressure sensor, and safety pressure switch.
- Motorized 2- and 3-way valves, PPH 100 piping, and fittings approved for food contact.
- Electrical panel mounted on an AISI 304 stainless steel frame in accordance with CE regulations.
- Operating voltage: 220 V.

MODELS, PERFORMANCE, AND CONSUMPTION

	Average working flow rate	Adsorption time	Volume treated per cycle	Total cycle time	Max. daily volume	NaOH consumption (25%)	Citric acid consumption (25%)	Water consumption
HL3 H3	2.500 L/h	1 h 30 min	3.700 litres	3 hours	30.000 litres	50 litres	42 litres	1.200 litres
HL3 H5	4.500 L/h	1 h 30 min	6.800 litres	3 hours	54.000 litres	90 litres	80 litres	2.300 litres
HL3 H7	8.000 L/h	1 h 30 min	10.500 litres	3 hours	84.000 litres	187 litres	165 litres	4.500 litres

Flow rates and cycle volume may vary depending on the amounts of material to be removed and the objectives to be achieved.

SUPPLIES AND CONNECTIONS

- Minimum electrical supply: 220 V, 50 Hz, 16 A.
- Compressed air via an 8 mm quick-connect fitting, pre-filtered and dehumidified, free of particles, odors, and oil.
- Tap water at room temperature.
- Must/wine inlet and outlet depending on model: NW50/DN50.

CLEANING AND OPTIONAL EQUIPMENT

Cleaning: specific and mandatory protocol included in the user manual.
Tap water may be used for washing, cleaning, and rinsing processes.

Optional equipment: 1,000-liter polyester water storage tank with an automatic filling system.

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