

# Tetra Extraction Machine G3

## Introduction

- The device is efficient and eco-friendly.
- Low, continuously monitored plant operating pressures secured by independent safety features in combination with the safety and non-flammability of 1,1,1,2-tetrafluoroethane make this technology an absolutely safe solution. The extraction process has fully automated control and is provided by the in-house TES (Tetra Extraction Software) control software. The program continuously evaluates all parameters of the production process.
- A set of security measures and several levels of access minimize the possibility of process error, preventing manipulation of recipes, changes to security settings and misuse of sensitive data. Intelligent monitoring of plant components together with predictive maintenance significantly reduce service and operating costs.
- The compact dimensions of the equipment and its light weight make it easy to transport and handle.



## Extraction vessel

- Material AISI 316
- Vessel's interior polished to a food-grade shine
- Vessel capacity 50 l
- Special extraction 40µm AISI 316 basket for fast material change – volume 34 l
- Outer insulation
- Heating/cooling – double shell design
- Pressure monitoring
- System pressure – 1 to 16 bar
- Safety – pressure relief valve 20 bar
- Temperature monitoring
- Operating temperature 20 to 60 °C
- Level detection
- Top pressure cap AISI 316 on hinges with two auxiliary gas struts and 16 screws
- Vessel opening detection
- Air vent valve in the top pressure cap
- SILICONE/PTFE/PTAN sealing

## Distillation vessel

- Material AISI 316
- Vessel's interior polished to a food-grade shine
- Optimally usable container volume 25 of 50 l
- Outer insulation
- Heating/cooling – double shell design
- Pressure monitoring
- System pressure – 1 to 16 bar
- Safety – pressure relief valve 20 bar
- Temperature monitoring
- Operating temperature 20 to 60 °C
- Three-level detection
- Top pressure cap AISI 316 on hinges with two auxiliary gas struts and 16 screws
- Vessel opening detection
- Discharge valve in the top pressure cap
- Bottom small pressure cap AISI 316 Tri-Clamp
- SILICONE/PTFE/PTAN sealing

## Solvent vessel

- Material AISI 316
- Vessel capacity 180 L
- Maximum volume of solvent in the vessel 120 kg
- Outer insulation
- Internal heat exchanger with cooling compressor
- Pressure monitoring
- System pressure – 1 to 16 bar
- Safety – pressure relief valve 20 bar
- Operating temperature 20 to 60 °C
- Manual service valve at the inlet and outlet of the vessel
- Level detection
- Vent and fill valve

## Vessel cooling system

- Powerful compressor cooling unit
- Piping material AISI 316/SF-Cu

## Extraction/distillation vessel heating/cooling system

- Piping material Brass /AISI 316/SF-Cu
- Multi-circuit system with expansion vessel
- Pressure up to 1 bar
- Outer insulation
- 3 x switchable heaters as required, each with an output of 0.9 kW
- Safety – autonomous temperature monitoring independent of the control system with automatic disconnection of heating elements
- Temperature monitoring
- Accumulation battery with a capacity of 25 l
- 2 x powerful circulation pumps, each with a flow rate of 55 l/min.
- 2 x active heat exchangers for medium cooling, each with a heat output of 2 kW

## Solvent regeneration

- Powerful 0.75 kW pump with a recovery rate of 25 l/hour. (depending on conditions)
- Active compressed gas inter-cooler
- Safety – pressure relief switches

## Power supply

- 230V/50Hz, max. 20A
- Single phase

## TES – control software

- 17" IntelliTouch screen, industrial PC
- Fully automated
- Pressure monitoring
- Temperature monitoring
- Level monitoring
- Recording the progress of events and changes in device states
- Possibility to create your own recipes
- Dual zone switchboard
- Audible status indication
- Optical status indication
- RFID
- 4G/5G
- WiFi
- GPS
- LAN

## Cartridges

- Solvent – 100 kg pharmaceutical 1,1,1,2-tetrafluoroethane
- Coolant – 2 kg pharmaceutical 1,1,1,2-tetrafluoroethane
- Heating system – 100 l food grade MPG + distilled water in a ratio of 1:3
- Vacuum pump – 0.4 l oil for food industry

## Other parameters

- Operating temperature 20 °C
- Relative humidity of the working environment 50 %
- Sound pressure level at full power 70 dBA
- Maximum volume of extracted material 34 l
- The average length of one extraction with distillation is about 1.5 hours (depending on material and conditions)
- Weight incl. cartridges 900 kg
- Height 190 cm
- Width 140 cm
- Length 140 cm