MADE IN ITALY

# PermaDos

## POTASSIUM PERMANGANATE ($KMnO_4$)

cod. 20211170

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# PermaDos

**POTASSIUM PERMANGANATE ($KMnO_4$)**

**PermaDos is a modular and expandable, fully automatic system designed for the continuous preparation of potassium permanganate solutions from dry product. Indispensable in civil and industrial wastewater treatment plants, it guarantees high performance in pre-oxidation, sedimentation, clarification and sludge dewatering processes through the use of advanced technologies (such as brushless motors) and high-quality construction materials (HDPE, PPH, PVC, AISI 304).**

The PermaDos model is equipped with HDPE tanks and a PPH powder dosing unit with hopper, connected to an expandable and hermetically sealable container, which guarantees maximum safety for operators, inside which a plastic-coated screw conveyor is housed. The four-blade propeller agitator, driven by a brushless motor, ensures precise speed control and a significant reduction in energy consumption. The system is completed by a hydraulic circuit with a meter, solenoid valves and control valves. The system is fully automated thanks to radar level probes and integrated safety devices.

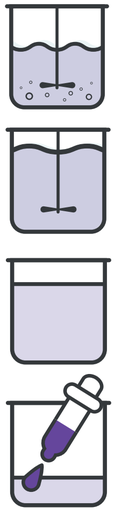
## ADVANTAGES

- **Automatic preparation:** reduced manual labour and errors, ready-to-use solution
- **Maximum precision:** solution concentration control with g/l measurement probe
- **Maximum efficiency:** solution optimisation and polymer activation
- **Flexibility:** modular configurations for different requirements
- **Savings:** reduced waste, lower energy consumption and simplified maintenance
- **High performance:** continuous process and consistent quality
- **Safety:** no dust released into the environment
- **Drain and overflow fittings:** 2”

## APPLICATIONS

- Civil and industrial purification plants
- Sludge and wastewater treatment
- Odor Control ($H_2SO_4$), Oxidation of Arsenic, Iron and Manganese
- Site Cleanup – Remediation
- Processes with flotation units, decanters, filter presses

## PROCESS



**1 MIXING**
**Initial dosing and homogenisation – concentration control**

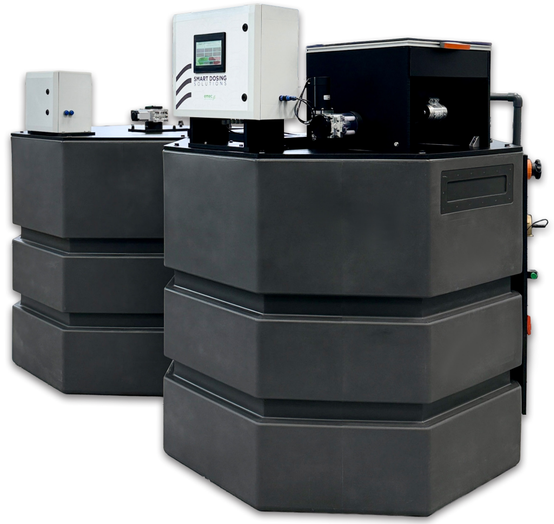
**2 MATURATION**
**Reaction and stabilisation of the solution**

**3 STOCKING**
**Controlled storage awaiting use**

**4 WITHDRAWAL**
**Precise and regular dispensing of the solution**

## FEATURES

- **PPH powder dosing unit**
  - Adjustment via brushless motor with electronic variation from HMI
  - 35-litre loading hopper with vibrator
  - Radar powder level control (minimum level)
  - Powder concentration adjustment from 0.1 to 0.5% (from 1 to 50 g/l)
- **Preparation water supply device consisting of**
  - Electronic ultrasonic flow meter (4-20 mA)
- **Radar level controller (solution)**
- **Mixer agitator**
  - L1000 three-phase brushless motor – 400 W
  - 4-blade propeller Ø 400 mm
- **Electrical control panel**
  - Utility management via 7” touchscreen HMI
  - Ethernet TCP/IP communication
  - IP65 ABS casing to protect electronic components



## MAIN ALARMS

- Emergency stop
- Low water flow
- Minimum solution level
- Maximum level (H)
- Overflow level (HH)
- High Solution
- Concentration
- Low Solution
- Concentration
- Dosing Pump Fault
- Powder Feeder Fault

## MODULAR SYSTEM

The system includes an independent master tank, which can be expanded with additional modules to adapt to different dosing and storage requirements. Assembly using rectangular flanges with gaskets and M8 screws ensures solidity and quick installation.

**Tank dimensions in mm: 1400x1400xh1200**

| Type / Model | PD-1500-1 | PD-3000-2 |
|---|---|---|
| Tot. volume Tank litres | 1702 | 3404 |
| Tank material | PEHD | PEHD |
| Maximum hourly production (/l/h) | 1500 | 3000 |
| Standard operating power | 200 W | 100 W |