CLAIMS

1. A sludge dewatering process, comprising

a step of chemical conditioning of the sludge to be dewatered during which a flocculation aid and a coagulant aid are added to the sludge, and

an electro-dewatering step,

wherein the electro-dewatering step is carried out, at least initially, at constant intensity, then the constant intensity control is abandoned in favor of a constant voltage control when a predetermined condition is met.

2. The process as claimed in claim 1, wherein the flocculation aid used is a polymer of anionic, cationic or nonionic flocculant type.

3. The process as claimed in claim 1 or 2, wherein, during the chemical conditioning step, the mass of flocculation aid added to the sludge is between 1 and 25 kg of pure product per tonne of dry matter.

4. The process as claimed in any one of claims 1 to 3, wherein the coagulant aid used is of mineral type.

5. The process as claimed in any one of claims 1 to 3, wherein the coagulant aid used is of organic type.

6. The process as claimed in any one of claims 1 to 5, wherein, during the chemical conditioning step, the mass of pure product of the coagulant aid added to the sludge is between 0.5% and 20% of the mass of dry sludge.

7. The process as claimed in any one of claims 1 to 6, wherein the electro-dewatering step is carried out within a filter press comprising at least two plates, each plate being equipped with at least one electrode and at least one plate being equipped with a filter, wherein the filter press compresses the sludge during the electro-dewatering step.

8. The process as claimed in any one of claims 1 to 7, wherein the constant intensity control is abandoned in favor of a constant voltage control when the temperature in the vicinity of an electrode reaches a threshold temperature.

9. The process as claimed in any one of claims 1 to 7, wherein the constant intensity control is abandoned in favor of a constant voltage control when the voltage reaches a threshold value.

10. The process as claimed in any one of claims 1 to 9, wherein, during the electro-dewatering step, the temperature of the sludge in the vicinity of the electrodes does not exceed a ceiling temperature below or equal to 150°C, preferably below or equal to 70°C.

11. The process as claimed in any one of claims 1 to 9, additionally comprising a filtration step carried out before the electro-dewatering step.

12. The process as claimed in any one of claims 1 to 10, additionally comprising a compression step carried out before the electro-dewatering step.

13. The process as claimed in any one of claims 1 to 11, wherein the sludge to be dewatered is a biological sludge derived from a wastewater treatment plant.