IMPACT OF MICROWAVE RADIATION ON THE PROCESS OF AEROBIC DIGESTION OF SEWAGE SLUDGE

Abstract

The process of aerobic stabilization of sludge is a process used in small or medium sewage treatment plants (up to 15 000 EN1). Owing to its energy intensity resulting from the need for intensive sedimentation and long-term process, many researches are being conducted on its intensification. One such method is disintegration. The purpose of disintegration is to increase the susceptibility of sewage sludge to aerobic decomposition by breaking up sediment flocs into fine particles along with the breakdown of cell membranes and then allowing biodegradation. The paper presents results of research of aerobic stabilized sludge, which is a mixture of non-disintegrated and microwave disintegrated sludge in different volume proportions. It was shown that sludge stabilized more quickly during the first days of the process.

The minimum reduction of organic solids required at 38% for stabilized sludge occur earlier in mixed sludge tests than in non-disintegrated sludge.

Key words: aerobic stabilization, disintegration, dry organic matter, microwaves