



MANAGEMENT OF SALT HYDRATES IN PHOTOVOLTAIC INSTALLATIONS IN LIGHT OF EXISTING ENVIRONMENTAL LEGISLATION

ZARZĄDZANIE HYDRATAMI SOLI WYKORZYSTANYMI W INSTALACJACH FOTOWOLTAICZNYCH W ŚWIETLE OBOWIĄZUJĄCYCH PRZEPISÓW DOTYCZĄCYCH OCHRONY ŚRODOWISKA

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Abstract

This paper discusses an environmental criterion rarely addressed in the literature for the selection of salt hydrates for use in photovoltaic installations as Phase change materials. The aim of the paper is to assess the possibility of utilization of used salt hydrates from photovoltaic installations according to current Polish legal requirements concerning the environment. The properties of the composition components of hydrated salts were discussed in terms of their safety for the environment before and after the period of exploitation in photovoltaic panels. A method of dealing with used salt hydrates was proposed and a waste code was assigned. It has been established that spent salt hydrates will be allowed to be collected in no-outflow tanks and accepted at liquid waste collection points, which operate at water supply and sewerage companies, and the load of permissible pollutants should not exceed the value for industrial sewage.

Keywords: photovoltaic, environmental, PCM, utilization, salt hydrates

Streszczenie

W artykule omówiono rzadko poruszane w literaturze kryterium środowiskowe wyboru hydratów solnych do zastosowania w instalacjach fotowoltaicznych jako materiałów zmiennofazowych (PCM). Celem pracy jest ocena możliwości utylizacji zużytych hydratów soli z instalacji fotowoltaicznych zgodnie z aktualnymi polskimi wymaganiami prawnymi dotyczącymi środowiska. Omówiono właściwości składników kompozycyjnych soli uwodnionych pod kątem ich bezpieczeństwa dla środowiska przed i po okresie eksploatacji w panelach fotowoltaicznych. Zaproponowano sposób postępowania ze zużytymi hydratami solnymi i nadano im kod odpadu. Ustalono, że zużyte hydraty solne będą mogły być gromadzone w zbiornikach bezodpływowych i przyjmowane w punktach gromadzenia nieczystości ciekłych, działających przy przedsiębiorstwach wodociągowo-kanalizacyjnych, a ładunek dopuszczalnych zanieczyszczeń nie powinien przekraczać wartości dla ścieków przemysłowych.

Słowa kluczowe: fotowoltaika, środowisko, PCM, utylizacja, hydraty solne

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