

FOAM DECONTAMINATION OF METALS

D. Shafikov, A. Belozub, A. Klyushakin, S. Shafikova

Khlopin Radium Institute, Saint-Petersburg, Russia

shafikov@khlopin.ru

ABSTRACT

The foam decontamination is quite promising method for purifying radioactive contaminated surfaces. Foam decontamination solutions allow creating the necessary volume of deactivating medium and forming a relatively small amount of secondary liquid waste so that this method may be applicable to bulky objects. Also it should be noted that foam compositions can be effective for objects with a complex geometry. Despite the numerous advantages the well known foam decontamination methods are unpopular today due to their low efficiency and difficulties of recycling waste decontamination solutions.

We have made some attempts to improve the attractiveness of foam decontamination process. Currently two compositions (acidic and alkaline) for foam decontamination have been tested. The main advantage of both tested compositions is that they are based on easily degradable surfactants. At the same time the acidic composition has a very low salt content.

The preliminary results of tests carried out in real production conditions showed that such approach for metal decontamination was very promising.

Metal decontamination factors over 2500 were achieved for consequent treating of metal surfaces with acidic and alkali foam solutions in industrial conditions. The total flow rate of foam generating solutions was 1 L/m² and processing time was 1 hour.

Presently we are trying to modify the foam physical properties to improve the process of decontamination of vertical, inclined and inverted surfaces. Also methods and scheme of spent foam generating solutions treatment are under development.