

A Study on the Search Method of the PerFluoroOctaneSulfonate:PFOS use for regulation

Takahiro YAMASAKI

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1. BACKGROUND

PerFluoroOctaneSulfonate (PFOS) has been widely used for the water-repellent medicine and the surface-active agent, etc. But it is paid attention as new persistent organic pollutant (POPs) in recent years. Under this situation, environmental pollution investigation and use regulation are performed in each country. But the versatile chemical substance tends to bring a problem after it was used widely. Therefore, it is difficult to identify a products when we want to regulate it because it used are very wide and the effective method in search of it is not yet developed. This research will consider method in search for a use of a very versatile chemical substance from the case study of PFOS.

2. RESULTS

(1) Countermeasures trend of PFOS regulation in the industry and problem

Firstly, questionnaire was conducted on 626 companies to know a trend for PFOS regulation and problem in the industries. As a result, almost 80% of the respondent has already carried out countermeasures and most of them replaced it with the other material in PFOS. But that is not perfect countermeasure because they were concerned about a change of the quality by using of the substitute material. Secondly, most of respondents confirmed the use situation of PFOS from a client. However, in that method, there was a problem to necessary time and expense to get information was pointed out. In addition, the accuracy of the information to be provided was too and it cleared that it was the present conditions that there was not a method to know a use of PFOS besides the method.

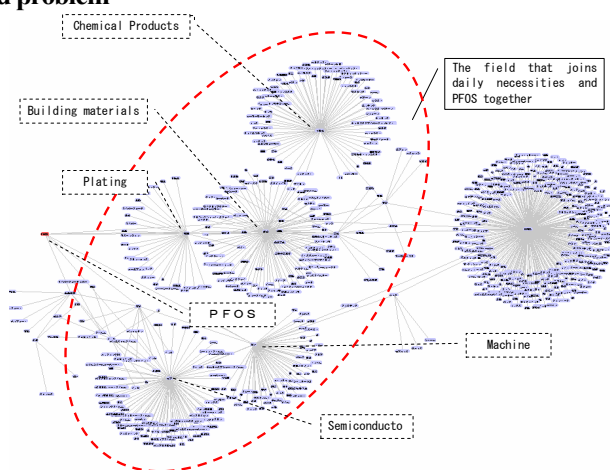


Fig.1 Relations with PFOS use and products

(2) Search method of chemical substances from patent information

In this research, patent information which is the accumulation of the technical information was used for searching the PFOS use. As a result, 18 PFOS use and 1589 related products were identified. When a result is compared with a report, some of them agreed and there were some use which not yet reported. In addition, it was cleared that the considered method made it possible to comprehensive search for the use of a versatile chemical substance including PFOS. And next, PFOS and the relation of the usage were shown as a graph chart. (Fig.1)

(3) The evaluation of the quantity of PFOS from Japanese interindustry table (2000)

It cleared that the discussion of the quantity at the micro-level about PFOS was difficult from the questionnaire survey. Therefore, discussion about the quantity of PFOS at the macro level was performed by using social statistics data. On evaluation, it was chosen a semiconductor (photo resist) as an example. As a result, among 401 divisions in Japanese interindustry table (2000), the indirect PFOS use was found in 54 divisions.

3. CONCLUSION

As a conclusion, countermeasure trend for regulation of PFOS in the industry was investigated and it is cleared that there was not a method to search for a use of PFOS comprehensively as a problem. Under this problem, new method to search for the use of the PFOS was considered by using patent information.