

• **Editorial**

The humidifier disinfectant scandal: the need for vigorous government oversight of chemicals and household products to secure public safety

The humidifier disinfectant scandal in South Korea is the first of its kind in the world and represents the most deaths caused by a home supply item.

The disinfectants were manufactured using materials from SK Chemical or other importers and distributed by multiple foreign and domestic companies, such as Oxy Reckitt Benckiser and Lotte Mart. The disinfectants were first introduced to the market in 1994, with more than 20 different types being sold until 2011. Over the 18 years, eight million people are presumed to have used this product. To date, about 130 people have been officially confirmed to have died as a result of using this household product.

Both the suppliers and the manufacturers bear primary responsibility for this tragedy. The suppliers sold the chemicals knowing their toxicity, and the manufacturers launched the product without securing a toxicity test report, yet still advertised their products as harmless to humans. The absence of an integrated legal and administrative system to identify and screen out toxic chemicals is also to blame. Currently, the system monitors chemicals and the products made from them separately. Therefore, because of the lack of an integrated regulatory system, when the intended use of a chemical is changed, and people are exposed to it in different ways, it is not possible to evaluate toxicity. The humidifier disinfectant that people directly inhaled was considered an industrial product, so it had been categorized as a voluntary certification product with no minimum safety standards. Various government agencies, such as the Ministry of Trade, Industry, and Energy; the Ministry of Environment; and the Ministry of Food and Drug Safety, are all partially responsible for monitoring potentially harmful chemical substances, which makes it difficult to pinpoint accountability; this loophole in the system has also led to delayed compensation for the victims. During industrialization, the Act on the Registration and Evaluation of Chemical Substances and the Chemicals Control Act were implemented to monitor the rapid increase in the use of such chemicals. This tragedy, however, shows that

Korea's regulatory regime is inefficient and is still far from the standards in other developed countries at ensuring public safety against toxic chemicals.

The Korean Society of Environmental Health and Toxicology and the Korean Society of Environmental Health, the two leading Korean academic societies on environmental health and toxicology, have been engaged from the onset of the humidifier disinfectant crisis. To minimize the suffering of the victims, the two societies participated in the government investigative committee and evaluated the appropriateness of government responses and relief activities. In 2011, the societies also hosted the first forum on environmental toxicity, conducted an independent study to identify the causes of the incident, and shared the research results with the public. Despite all of these efforts, it is very unfortunate that this incident has not yet been resolved and the victims have not yet received financial relief.

Both societies pledge to continuously take action to further strengthen the rules and regulations regarding research ethics and conflicts of interest, thereby improving standards in the areas of environmental health and toxicology.

To that end, the two societies hosted a second forum on environmental toxicity to develop subsequent relief and compensatory measures for the victims as well as measures to prevent a similar incident in the future. At the same time, the two societies call for systematic policy support from the government so as to implement the following:

1. Use all available national resources to relieve and compensate the victims appropriately, and establish institutional frameworks to guarantee people's safety against chemical substances and to prevent another tragic incident.
2. Establish standards for evaluating the effect of disinfectants on the lungs and respiratory system (including the development of respiratory diseases such as rhinitis, bronchitis, and asthma), other organs, and mental health.
3. Ensure that not a single victim is excluded from receiving appropriate relief measures and compensation due to limitations of modern

science or administrative difficulties. Moreover, the disinfectant users and the victims' health should be monitored continuously. Additional efforts should be made to search for potential victims who used the product in question but were unreported.

4. In addition to general medical, social, and financial support, provide victims with immediate mental health support and rehabilitation at the national level. Such supports will help the victims recover and return to society.
5. Consolidate the management of all current environmental damage and compensation laws (e.g., Asbestos Injury Relief Act, Act on Liability for Environmental Damage and Relief Thereof, and Special Act for the Hebei Spirit Oil Spill Incident at Taean) under a single regulatory regime so as to more effectively investigate the causes/damages and to manage compensation in a more efficient way.
6. Overhaul the current toxicity testing system for chemical substances to ensure rigorous standards equivalent to those of the European legislation on Biocide, and advance the level of science and technology used for the safe management of toxic chemicals. Special legislation for biocide products should be enacted to mandate that manufacturers register their products and obtain government permission before launching. As weaknesses have been exposed in the

existing Act on the Registration and Evaluation of Chemical Substances, an integrated management system for chemicals and consumer products is necessary.

7. Enforce registration and evaluation of all chemicals distributed domestically and establish a Toxic Substance Control Center for post-marketing surveillance of distributed chemicals; the Center will be able to monitor damages caused by chemical substances and reinforce chemical substance management accordingly.

Finally, yet most importantly, we hope Korean society will show sincere sympathy and support for the suffering experienced by the victims and their families.

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