

# Humidifier Sterilizer Issue at a Glance (as of August 19, 2016)

## Result of Government Verification on HS Damage Claims Source: Ministry of Environment (Aug 18, 2016)

Category	Total	Cat 1	Cat 2	Cat 3	Cat 4	Unknown	Responsible
<b>Total</b>	<b>695</b>	<b>171</b>	<b>87</b>	<b>110</b>	<b>321</b>	<b>6</b>	
	<b>506</b>	<b>87</b>	<b>58</b>	<b>95</b>	<b>261</b>	<b>5</b>	
	<b>189</b>	<b>84</b>	<b>29</b>	<b>15</b>	<b>60</b>	<b>1</b>	
Round 1	361	129	43	40	144	5	Ministry of Health and Welfare Korea Centers for Disease Control & Prevention
Round 2	169	28	23	21	96	1	Ministry of Environment Korea Environmental Industry & Technology Institute
Round 3 (As of Aug 2016)	165	14	21	49	81	0	Ministry of Environment Korea Environmental Industry & Technology Institute

**Categorization of HS damage:** HS users are classified into 4 categories based on comprehensive assessment on environmental exposure, tissue pathology, image medical science, and clinical medicine, etc.  
 Cat 1 : Almost Certain / Cat 2 : High Possibility / Cat 3 : Low Possibility / Cat 4 : Almost No Possibility / Unknown : Determination Not Possible e.g. due to insufficient evidence\* *Direct translation from Korean*

## Why HS was Used

- Housing Culture of Apartment Dwelling** It is highly likely that the air becomes very dry in apartments during the winter, and apartment dwellers use humidifiers more to avoid the air from becoming too dry.
- Mysophobia Proliferated by Mass Media** The mass media constantly reporting that bacteria can cause great harm to the health and the pandemic of SARS and influenza fueled the fear for germs and bacteria
- Low Fertility Society and Higher Interest on Health** As the interest in children's health grew due to a low fertility rate, parents used humidifiers to prevent them from catching an infectious disease.
- A Society that Chases the Convenience Brought by Science Technology** HS's convenience that allowed users pour liquid HS into the humidifier without having to inconveniently cleaning the reservoir may have attracted more users






Source: White Paper on Humidifier Disinfectant Health Damage Case (Lung Damage Investigation Committee, Center for Disease Control & Prevention, Ministry of Health & Welfare)

## Regulatory Changes after 2011

Source: Nam-soon Jeong, The current status and problems of the chemical substance management system through the lens of the HS issue, The 11<sup>th</sup> Environmental Law and Policy (2013) and other media reports

<b>Toxic Chemicals Control Act</b>	<ul style="list-style-type: none"> <li>The Toxic Chemicals Control Act regulates and assesses chemical substances since it was introduced in February 1991 by the Ministry of Environment</li> <li>New chemical substance should be registered for toxicity testing but the law has limitations in that it does not require existing chemical substances to be registered when newly imported or manufactured</li> <li>The Act on Registration, Evaluation, Etc. of Chemicals has been implemented since 2015 to require any person who manufactures or imports existing chemicals subject to registration of more than 1 ton to register the use and amount of the chemicals</li> </ul>
<b>Quality Control and Safety Management of Industrial Products Act</b>	<ul style="list-style-type: none"> <li>The Quality Control and Safety Management of Industrial Products act overlooks quality management and industrial products management, such as everyday chemical supplies (Ministry of Trade, Industry and Energy)</li> <li>After 2007, HS was regulated under the Quality Control and Safety Management of Industrial Products Act, but because the safety inspection was limited to information such as appearance, volume, weight, toxic chemical ingredients, etc., no issues were raised.</li> </ul>
<b>Pharmaceutical Affairs Act</b>	<ul style="list-style-type: none"> <li>The Pharmaceutical Affairs Act requires necessary issues related to pharmacists to improve national health needs (Ministry of Health and Welfare, Ministry of Food and Drug Safety)</li> <li>After HS was suggested to be the cause of injuries in September of 2011, December 30th of the following year, the Ministry of Health and Welfare additionally added HS, which is used to prevent the breeding of microbes and slime through its addition to the water inside humidifiers, as a quasi-drug under the Pharmaceutical Affairs act (Ministry of Health and Welfare Notice 2011 No. 173)</li> </ul>

## HS Chronology

<b>1994</b> Yukong (Currently SK Chemicals) developed the first HS product and launched advertisement and sales 	<b>November 1996</b> Oxy, affiliate of OCI, released its HS "Humidifier Guard" Oxy RB's former CEO Hyun-Woo Shin ('91-'05) bought a 44.35% stake in Bullstone from OCI (formerly known as Oriental Industrial Chemicals) in 2010	<b>2000</b> Oxy changed active ingredient to PHMG	<b>2000-2011</b> A number of manufacturers and private label retailers supplied the Korean market with HS products	<b>March 2001</b> RB acquired Oxy 	<b>2006</b> The Ministry of Health & Welfare relegated environmental health-related work to the Ministry of Environment	<b>August 31, 2011</b> The KCDC released its first public announcement on the results of its epidemiology study. It announced that HS products may be the cause of reported lung injuries and recommended against the use or sale of the products. Oxy RB began a voluntary withdrawal of Sac Sac HS prior to the public recall initiated by the government	<b>November 4, 2011</b> The KCDC announced the interim results of their animal inhalation tests finding a causal link between HS products and the reported lung injuries, strongly recommending against their use	<b>November 11, 2011</b> Korean government ordered a recall of all HS products	<b>February 2012</b> The KCDC announced that HS products containing PHMG-P and PGH had caused lung fibrosis	<b>August 2012</b> The Korean Fair Trade Commission ruled that Oxy RB, Homeplus, and Cefu violated the Fair Labelling & Advertising Act. Oxy RB and Homeplus' appeals were respectively dismissed in 2014 and 2013	<b>November, 2012</b> The Ministry of Trade, Industry, and Energy delegated the management of everyday chemical products to the Ministry of Environment	<b>November 2012</b> The KCDC Investigation Committee was formed to review all reported cases	
<b>August 2013</b> MOE announced relief plans for HS victims	<b>November 2013</b> Oxy RB's General Manager appeared at a National Assembly hearing, expressed his sincere regret at the pain and suffering of the victims and at failing to reach out sooner. Oxy RB announced a Humanitarian Fund for HS victims	<b>March 2014</b> Announcement of Rd 1 investigation results by the KCDC; 361 cases reported	<b>March 2014</b> Oxy RB formalized its Humanitarian Fund for KRW 5 billion in cooperation with the MOE and Korean Environmental Preservation Association	<b>April 16, 2014</b> Sewol Ferry Incident	<b>August 2014 - March 2016</b> Oxy RB took part in court-mediated and direct settlements for many of the Cat 1, 2 cases brought to court	<b>April 2015</b> Announcement of the Rd 2 investigation results by the MOE; 169 cases reported	<b>May 2015</b> HS victims' groups visited UK for protests	<b>October 2015</b> UN's special rapporteur on human rights and toxic wastes met with victims and held a press conference	<b>December, 2015</b> Rd 3 applications received until December 31, 2015; 752 cases reported	<b>April 18, 2016</b> Lotte Mart offered an apology and pledged to form an organization responsible for compensation, review claims and criteria, and raise KRW 10 billion 	<b>April 21, 2016</b> Oxy RB apologized for the disappointment caused to the victims and their families due to the lack of an appropriate response and communication related to the HS issue.	<b>April 22, 2016</b> MOE announced that it planned to resume accepting new applications for Rd 4 investigation, planned for completion by the end of 2017. It also announced that it would continue to study health effects caused by the HS products other than lung damage.	<b>April 26, 2016</b> Homeplus offered an apology and pledged to form an independent organization for compensation 
<b>May 2, 2016</b> Oxy RB apologized to HS victims and families and accepted responsibility for HS' role in causing such a tragedy and a delay in providing proper remedy 	<b>May 6, 2016</b> RB Group CEO met with a father of a victim and offered an apology	<b>May 20, 2016</b> Oxy RB hosted the 1 <sup>st</sup> group meeting for Cat 1, 2 Oxy HS victims to reiterate its apology and consult the victims and families on the Compensation Plan	<b>June 2016</b> UN Working Group visited Korea to observe the implementation of the UN Guiding Principles on Business and Human Rights and held a press conference	<b>June 18, 2016</b> Oxy RB hosted the 2 <sup>nd</sup> group meeting for Oxy victims to reiterate its apology and consult the victims and families on the Compensation Plan	<b>June 26, 2016</b> Oxy RB hosted the 3 <sup>rd</sup> group meeting for Oxy victims to reiterate its apology and consult the victims and families on the Compensation Plan	<b>July 6, 2016</b> National Assembly launched HS Special Investigation Committee <b>Subjects Underneath National Assembly Special Committee's Investigation</b> (Government/Organizations) Ministry of Justice, Office for Government Policy Coordination, Ministry of Environment, Ministry of Trade, Industry and Energy, Ministry of Health and Welfare, Fair Trade Commission, Ministry of Strategy and Finance, Ministry of Food and Drug Safety, Ministry of Employment and Labor, National Institute of Environmental Research, Korea Environmental Industry & Technology Institute, Korea Agency for Technology and Standards, Korea Center for Disease Control & Prevention, Korea Consumer Agency, Korea Occupational Safety & Health Agency  (Businesses) HS retailers, such as Oxy Reckitt Benckiser, Aekyung, Lotte, Homeplus, Shinsegae Emart, Homecare, GS, Daiso, Costco, and Henkel, and manufacturers and raw material suppliers, such as Hanvit Chemical Co., SK Chemicals, Yongma Industrial Co., Medentech, General Bio Co., Pure & Core Co., Sandokkaebi, etc	<b>July 31, 2016</b> Oxy RB announced the Compensation Plan for Cat 1, 2 Oxy HS victims from Rd 1, 2	<b>August 1, 2016</b> Oxy RB began accepting applications for the Compensation Plan from Cat 1, 2 Oxy HS victims from Rd 1, 2	<b>August 18, 2016</b> Announcement of Rd 3 investigation results by the MOE; 35 HS users classified as Cat 1, 2 victims ( <b>*Two CMIT, MIT users confirmed as victims</b> )				

## HS Merchandisers

 <b>Oxy RB</b> Oxy Sac Sac HS (PHMG)	 <b>Lotte Mart</b> Wiselect HS (PHMG)	 <b>Cefu</b> HS (PGH, PHMG)	 <b>Aekyung</b> Humidifier Mate (CMIT, MIT)	 <b>GS Mart</b> Hambakwooseum Humidifier Cleaner (CMIT, MIT)	 <b>Costco</b> Humidifier Cleanup (PHMG)	 <b>LG Household &amp; Health Care</b> 119 Humidifier Bacteria Cleaner (BKC)
 <b>SK Chemicals (Yukong)</b> Humidifier Mate (CMIT, MIT)	 <b>Homeplus</b> Humidifier Purifier (PHMG)	 <b>Henkel</b> Homekeeper Humidifier Clean at Once (CMIT, MIT)	 <b>Emart</b> HS (CMIT, MIT)	 <b>Daiso</b> Sandokkaebi Humidifier Furnish (CMIT, MIT)	 <b>Ato Organic</b> HS (PGH)	

## HS Manufacturers

Hanvit Chemical	Medentech
SK Chemicals	General Bio
Yongma Industrial Co.	Pure & Co.
KeTox	Sandokkaebi
Aekyung Industrial Co.	Glonn

## Compensation Plan by HS Companies

<b>Oxy RB</b>	Announced the Compensation Plan established based on the four Core Principles of Respect, Fairness, Transparency, and Speed and reflecting the views of victims and families on July 31, 2016; Formed the Care Manager Team consisted of Oxy employees; Began accepting claims registrations from August 1
<b>Lotte Mart</b>	Offered an apology and pledged to form an organization responsible for compensation, review claims and criteria, and raise KRW 10 billion for compensation. Announced that it would begin its discussion on compensation with the victims whose damage is confirmed to be caused by Lotte HS upon the completion of the prosecutors' investigation
<b>Homeplus</b>	Vowed to establish an independent organization participated by external experts from all walks of life for objective decision-making and to collaborate with government agencies to provide proper compensation