Leaving Hazardous Chemicals Management to Chemicals Manufacturers

Companies and governments must work together to ensure that hazardous chemicals are used safely

With economic and industrial development, the use of specialty chemical products in high-tech industries has significantly grown due to the absolute linkage between chemicals and industries. As a result, the safe handling of these products, which include chemical gases, is more important than ever. The fact that Korea’s Ministry of Public Administration and Security underwent a slight name change under the Park Geun-hye administration — to the Ministry of Security and Public Administration — shows that the government really is putting safety first.

However, another priority is expanding business areas proper for small- and medium-sized enterprises (SMEs) in Korea, and one way the government does this is by limiting the gas-service and safety-control sectors to SMEs only. Large companies of a certain size, despite possessing the expertise required to handle hazardous substances, are not permitted to do business related to gas maintenance. This leads to smaller companies doing work that they are, at times, unqualified to do. The problem is compounded by the lack of regulations in Korea on the use of greenhouse gases, which industries prefer over environmentally friendlier material because they are cheaper.

Multinational companies here have spoken to Foreign Investment Ombudsman Dr. Ahn Choong Yong on numerous occasions about the need for businesses of their size and expertise to handle hazardous substances. Solvay, a Belgian chemical company that has long invested in Korea, is one of them.

In June, Dr. Ahn visited Solvay headquarters in Brussels to hear from executives there about the need for chemicals management to be performed by companies with expertise and experience. They emphasized Solvay’s zero-accident record over 45 years. Referring to a series of recent hydrofluoric acid leaks in Korea, Solvay staff pointed out that the main problem is that chemicals are managed by the corporate clients of chemical companies, like electronics companies, and not by chemicals manufacturers.

Another issue raised at Solvay dealt with the unregulated use in Korea of nitrogen trifluoride gas (NF3), a potent greenhouse gas with Global Warming Potential (GWP) equivalent to 17,200 tons of CO2. Rapidly growing in use, the relatively affordable NF3 was included as the seventh greenhouse gas targeted by the Kyoto Protocol in 2011. NF3 is also commonly used in semiconductor cleaning. As of 2010, Korea, being a semiconductor powerhouse, accounted for 35 percent of the global demand and 48 percent of the global production of NF3. A safer alternative to NF3 is F2, an environmentally friendly gas with no GWP and high cleaning power.

Solvay, which boasts decades of experience in fluorine (F2) production, formed a joint venture called Fidelio in 2012 with the France-headquartered Air Liquide, a leading gas and chemical company. Fidelio builds and supplies gas injectors comprising skid modules used to inject F2 gas. Though safer, the explosiveness and toxicity of F2 makes gas delivery risky. Fidelio is now carrying out an investment project having to do with safe gas supply.

The joint venture has a presence in Korea as well, and Dr. Ahn and his experts, called Home Doctors, visited a related plant under Solvay Korea in August. Choi Seung-bong, Plant Manager of Solvay Korea, said the company has not recorded any injuries since beginning operations in 2006 due to the fact that 50 percent of the facility management focuses on safety control.

In 2009, Korea declared its GHG reduction target to be 30 percent below BAU levels by 2020. Indeed, the world is already feeling the impacts of climate change; abnormal temperatures this summer are proof. The time has come for the international community, including Korea, to not only beef up safety policies, but to also engage in cross-border cooperation across domestic companies, multinational corporations and governments to combat climate change.

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