Environmental Initiatives

Activities for Managing Chemical Substances

We manage chemical substances with the aim of preventing environmental pollution.

Complete Abolition of Organochlorine Chemicals

Continuing with complete abolition

- Complete abolition of substances subject to the Soil Contamination Countermeasures Law
  - We are continuing our initiative for complete abolition of dichloromethane, trichloroethylene and tetrachloroethylene, which are organochlorine chemicals covered by the Soil Contamination Countermeasures Law.

Total abolution of ozone-depleting substances

- We totally eliminated use of the ozone-depleting substance HFC-225 in fiscal year 2008, and that of HFC-141b in fiscal year 2010. We have maintained the total elimination of such use.

Emission Control of VOC (Volatile Organic Compounds)

Emissions in Japan reduced 48% in comparison with fiscal year 2006, a 44% reduction in terms of basic sales unit.

In fiscal year 2015, the reduction reached 48% in comparison with fiscal year 2006 due to a variety of factors. These include the introduction of solvent regenerators, the use of low-solvent coatings, the adoption of detergents that contain no VOC substances and reduction in the amount of coating used. This was also a 44% reduction in terms of the basic sales unit. Continuing from fiscal year 2015 measures, we will expand the use of low-solvent paint while ensuring that we maintain the quality of our products. We will also install and expand solvent collection and removal equipment to reduce the emission and transfer of PRTR substances.

Emissions and transfer volume of Class 1 Designated Chemicals Substances under the PRTR Law in FY2015 (substances subject to reporting)

<table>
<thead>
<tr>
<th>Substance</th>
<th>Emission + transferred amount (kg/million yen)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2014</td>
</tr>
<tr>
<td>HCF</td>
<td>74.4</td>
</tr>
<tr>
<td>CHF</td>
<td>60.3</td>
</tr>
<tr>
<td>CFH</td>
<td>111.2</td>
</tr>
<tr>
<td>CFCl</td>
<td>189.8</td>
</tr>
<tr>
<td>HCFC-225</td>
<td>12.70</td>
</tr>
<tr>
<td>HCFC-141b</td>
<td>1.95</td>
</tr>
<tr>
<td>HCFC-123</td>
<td>0.12</td>
</tr>
<tr>
<td>HCFC-152a</td>
<td>0.12</td>
</tr>
<tr>
<td>HCFC-152b</td>
<td>0.12</td>
</tr>
<tr>
<td>HCFC-152e</td>
<td>0.12</td>
</tr>
<tr>
<td>HCFC-152m</td>
<td>0.12</td>
</tr>
<tr>
<td>HCFC-152o</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Emissions and Transfer of PRTR Substances

Emissions reduced 51% in comparison with fiscal year 2006, a 48% reduction in terms of basic sales unit.

More than 90% of PRTR substances are paint solvents (toluene, xylene, ethylbenzene). In FY2015, we reduced these substances by 51% of the level in FY2006. This also represents a 48% reduction in terms of the basic sales unit. We will continue to expand low-solvent paints while ensuring that we maintain the quality of our products. We will also install and expand solvent collection and removal equipment to reduce the emission and transfer of PRTR substances.

Stronger Environmental Risk Management

Strengthening environmental management systems at factories outside Japan

In the Sumitomo Heavy Industries Group, we are advancing our efforts to strengthen environmental risk management at factories outside Japan. Environmental regulations and other such requirements are growing more stringent at the locations of our factories outside Japan. With guidance from local authorities, we are working continuously to strengthen our environmental management systems at each factory in order to comply with local law.

Priority Management System Established in the China Area

The China area has a maximum of eight factories in operation, categorized by area. In order to provide centralized environmental management operations for these Chinese factories, we established a department in our Shanghai office in 2011 to provide overall environmental management supervision of the China area. A full-time manager has been assigned in this department, and the manager is acting to provide guidance on environmental management operations in the factories, engage in supervisory operations, and pursue other such activities.

The matters required by environmental laws and regulations in the China area have a maximum of eight factories in operation, categorized by area. In order to continue in business, it has become essential to strengthen management functions relating to the prevention of environmental pollution. Our Shanghai office had already been providing each factory with information about revisions occurring in environmental regulation, and was providing guidance on improving the systems to address changes. Since fiscal year 2015, however, we have also been actively disseminating the details of the guidance received from the supervisory units of environmental management authorities in the various areas where our factories are located and disseminating that and related information to all the factories. We hold regular video conferences between the Shanghai office and the head office on matters relating to environmental management.

Environmental Risk Management Department

The Environmental Risk Management Department, which is responsible for environmental risk management in the China area, are our only overseas factories that hold regular environmental risk management meetings. These meetings bring together the environmental managers of each of our factories in China to hear explanations of environmental policy from the head office, to present reports on the status of environmental management at each factory, and so on. These activities are contributing to the raised level of environmental management throughout the area.

Environmental management meeting

Stronger Environmental Risk Management

Promoting Environmental Risk Assessment at Factories in China and Southeast Asia

The Sumitomo Heavy Industries Group factories outside Japan, those in China and Southeast Asia face relatively higher environmental risks. We are therefore implementing environmental risk assessments, taking the procedures used at factories in Japan as a basis. We initially started the environmental risk assessments from the management items that present the highest risk for the product in question. Since then, we have gradually been increasing the number of items for assessment. In fiscal year 2015, we provided the results of environmental risk assessments conducted at the mother factories in Japan to the factories of affiliated businesses outside Japan. This furthered the lateral dissemination of knowledge regarding particular measures to address environmental risks that were experienced in the past at factories in Japan. At the same time, we are implementing environmental risk assessments in a way that unifies the identification of environmental concerns that require coverage under ISO 14001 with the development of systems for addressing those concerns.

Promoting ISO 14001 External Certification and Expanding Promotion Efforts

All Sumitomo Heavy Industries Group factories in Japan have already obtained ISO 14001 external certification. We are therefore advancing our efforts to expand the acquisition of ISO 14001 external certification by our factories outside Japan.

Group companies outside Japan that have received the ISO14001 certification

*For details on our environmental management activities and related initiatives, please refer to our Environmental Sustainability Report"
Environmental Initiatives

Relations with Society

Strengthening Environmental Management Activities at Factories Outside Japan

We establish environmental management systems at Sumitomo Heavy Industries Group factories outside Japan in accordance with the environmental regulations in place at the particular factory locations, where requirements vary from one to the other. These factories that have established environmental management systems under ISO 14001 have organized the basic elements relating to environmental management in systematic form. This means that significant benefits can be obtained when the management methods used at factories in Japan and other such information is disseminated laterally.

In fiscal year 2015, one of our factories in China newly acquired ISO 14001 external certification. As a result, all of our manufacturing plants in the China area have now acquired ISO external certification.

Promoting Environmental Audits in Factories Outside Japan

The head office Environmental Management Division implements periodic environmental audits of Sumitomo Heavy Industries Group factories outside Japan. Environmental audits at factories outside Japan have applied the same standards as factories in Japan since fiscal year 2012. We are checking the environmental management activities at each factory with the aim of reducing its environmental risk to the same level as at our factories in Japan.

The frequency of audits is determined according to the environmental risk at the factory in question, taking local environmental requirements into consideration. During the audits, we check the status of on-site management and related matters. This includes determining whether activities are underway to comply with local conditions, including environmental regulations regarding the atmosphere, wastewater, and so on, and regulations regarding waste disposal, that differ from regulations in Japan. In fiscal year 2015, we conducted environmental audits at four factories in China and the Southeast Asia area.

Upgrading Educational Systems for Environmental Managers at Factories Outside Japan

We initially set up and administered the environmental management system at Sumitomo Heavy Industries Group factories outside Japan so that the focus of environmental management activities was on activities to prevent environmental pollution. As the requirements of local environmental management laws and regulations have grown more sophisticated, however, and a growing number of factories have acquired ISO 14001 external certification, we have gradually expanded the scope of management. This means that the environmental managers at the various factories are being required to demonstrate higher levels of knowledge, management expertise, and other such capabilities, and we are therefore developing a system for their continuing education.

As part of this initiative, we invited the environmental manager at our Shanghai offices to come to Japan for a sophisticated educational program. This involved sitting in on environmental audits at our factories in Japan, hearing lectures on the practical business of environmental measurement at the business divisions engaged in construction of environmental facilities, and so on. In fiscal year 2015, we also initiated a first effort in providing assistance to factories outside Japan that were working to acquire ISO 14001 external certification. We therefore provided the environmental managers at our Indonesia factories with training in environmental management that included the state of environmental management system operations in accordance with ISO 14001 at factories in Japan.

Global Warming Prevention Initiatives at Factories Outside Japan

The Sumitomo Heavy Industries Group’s factories outside Japan have been strengthening their activities to reduce CO₂ emissions since 2011. Activities to reduce energy consumption started with active steps to cut the consumption of electric power for factory illumination, factory air conditioning, air compressors, and so on. We began by turning off worksite lighting and air conditioning during break periods and other such times, and by adjusting the air conditioning to appropriate temperatures. We have been taking steps for the lateral dissemination of energy conservation measures adopted at factories in Japan and related activities.

At our factories in China, factory-wide measures are being taken to cut back on power consumption for lighting in factory work areas. We started by taking on-site measurements of illumination intensity, using the illumination intensity standards adopted for workplaces in factories in Japan as a reference. We are also eliminating the conventional mercury vapor lamps used for factory ceiling lights and switching to energy-saving forms of lighting. In addition to the adoption of light-emitting diodes, which have been adopted in many instances at factories in Japan, these lighting changes have also involved the adoption of energy-saving types of discharge lamps and other forms of lighting with widespread local dissemination. The Shanghai Factory and the Kunshan Factory buildings have large skylights to admit light, so that the illumination required for work can be adequately supplied by the factory skylights on sunny days with the ceiling lights turned off. The ceiling lights are therefore extinguished in the daytime. This depends also on the nature of the work being done on the shop floor. Precision measurement and other such operations, for example, require greater illumination intensity. The point, however, is to keep from increasing the ceiling lighting in these workplaces, instead making active use of localized illumination. At the Kunshan Factory, the workplaces that require localized illumination have light-emitting diodes installed on the pillars and wall surfaces around the shop floor to ensure that illumination is provided to workplaces more efficiently. In addition, movable lighting equipment is set up so that every measure is in place to provide optimal lighting for day-to-day work. These activities to improve lighting equipment for the purpose of energy conservation are being carried out on a factory-by-factory basis, with individual factories using their own resources to investigate and implement improvement measures. This indicates that the standards for energy-saving activities have risen even higher even at the shop floor level in our factories.