

# Preventing accidents and protecting the environment with a broad array of programs

## Accident Prevention Initiatives



Accident Prevention Training at the Hikari Plant

Takeda establishes the "Policies on Accident Prevention" in each fiscal year. Each business site establishes an action plan based on the policies for preventive measures that cover both facilities and employee skills.

For facilities, we have a rigorous management program that includes a maintenance plan for aging equipment. To prevent fires and other accidents, we have safety measures concerning static electricity and flammable substances. Static electricity can create explosions and fires by igniting flammable gases and dust in facilities. This is why we are constantly working on eliminating the risks posed by static electricity in all production processes and machinery.

### Countermeasures against Static Electricity

- Earthing and bonding of facilities
- Measurement of electric potential of equipment in operation
- Making filters, hoses, etc conductive
- Wearing antistatic working clothes and shoes
- Floor coating with conductive resin, etc

Protecting production equipment from earthquakes is another priority. When a tremor above a certain magnitude occurs, sensors on key machinery transmit a signal that activates emergency shut-off valves. By stopping the supply of gas, oil and other fuels, this system prevents fires and other secondary problems following an earthquake.

To upgrade employees' skills, we have expanded our Accident Prevention Manual and upgraded our Non-Standard Operations Manual. We use both manuals for training and drills. These manuals are also vital to passing on accident prevention and response techniques to younger workers. All of these activities take place at every Takeda Group production site in Japan and around the world.

### Non-Standard Operations

Non-standard operations are operations involving work procedures which are not performed continually or repeatedly on a routine basis; such as facility maintenance, trouble shooting, changeover productions, test trials. Non-standard operations are characterized by the frequent occurrence of accidents compared to standard operations, for reasons such as the fact these operations are less familiar to the operators, and are operated without clear methods, procedures, and management structure.

Preventing fires and explosions during manufacturing processes is a particularly important goal. To improve safety, we determine the physical characteristics of our drugs and use manufacturing processes appropriate to those properties. Starting at the R&D stage, we assess the risks involved with drug candidate compounds and production processes. To achieve an even higher level of safety we have reexamined the assessment processes and made improvements as required.

Vitamin production equipment was removed from the Hikari Plant in fiscal 2008. Currently, a major project is under way to construct a new research center in the cities of Fujisawa and Kamakura in Kanagawa prefecture. In every instance, we are using extensive measures to minimize environmental risks and prevent accidents and other problems.

### Risk Assessment of Candidate Compounds and Processes

- Thermal hazard
- Hazard by friction and impact
- Chemical reaction hazard
- Risk of dust explosion, etc