

Occupational Health and Safety

Safe, Healthy, and High Quality Work Environment

The president of Nanya has signed a safety and health policy declaration, the Taiwan plant obtained ISO 45001 Management System certification, and the "NDAZ-0002 EHS Management Manual" was established to provide a safe, healthy, and excellent work environment to all workers at Nanya (the average of employees was 87% and other workers who are not employees was 13% in 2021). The Company is committed to ensuring that all workers of the Company have the ability to recognize hazards when conducting business activities so that occupational injuries can be prevented.

Nanya occupational accident prevention goals

Zero disabling injury



Complete safety and health training



Job safety analysis



Work safety observations and interviews



Process Safety Management (PSM)



Hazard and operability analysis



Periodic risk assessment



Safety culture seminar

Nanya continues to dedicate its efforts to achieve zero disabling injuries in our factories. We have not let our guard down when it comes to disaster prevention, and we are constantly improving the safety concepts and behavior of workers. We have implemented the following measures to prevent occupational accidents:

- Annual regulatory and hazard identification and risk assessment procedures
- Annual occupational safety and health education and training plan
- Periodically organize safety culture seminars
- Job safety analysis (JSA) to analyze potential operational risks
- Safety Walk and Talk (SWAT)
- Process Safety Management (PSM)
- HazOp analysis to analyze potential equipment risks

Zero occupational disease



Special physical examination



Health management plan



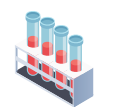
Health promotion seminar



Maternal health assessment



Classified management of chemicals



Operating environment monitoring



Periodic risk assessment

Nanya implemented the following measures to protect employees from occupational disease during special operations that are hazardous to health:

- Annual regulatory and hazard identification and risk assessment procedures
- Monitoring of work environment is performed twice a year
- Implement classified management of chemicals and exposure assessment
- Annual special hazard health exams (noise, ionizing radiation, arsenic, indium, n-Hexane, and mercury) and classified health management
- Health management plan (monitor and assess personnel working too many hours each month, repetitive musculoskeletal hazard prevention survey)
- Maternal health hazard assessment for pregnant women
- 5 or more health seminars are organized each year

In 2021, a total of 35 safety and health training courses were completed, and 9,962 enrollments were recorded. New recruits and senior employees/managers were trained for certifications required by the law and hazardous operations. An emergency response team (ERT) was established and motorcycle defensive driving courses were provided. We organized 48 emergency response drills to strengthen the training and response ability of personnel, including medium and high risks (such as chemical leakage and fire accidents), rescue of injured personnel, evacuation during an earthquake or fire accident, and actual operations of fire extinguisher. In addition to training, the Safety and Health Division conducted monthly on-site SWATs at the workplace of various teams based on 36 themes. The 35 suggestions for improving operational behavior safety were put forward for personnel to act accordingly to the contents of regulations. Improvements to the operational environment focus on safety and health improvements for medium and high risks in clean rooms.

Nanya 2021 Special Hazard Health Management

Ionizing radiation Number of operators 144	Noise Number of operators 100 ^{Note}	Arsenic Number of operators 84
Indium Number of operators 32	Inorganic mercury Number of operators 26	n-Hexane Number of operators 5

Note: Three employees implemented level 4 health management due to noise in 2021. After on-site assessment by an occupational medicine specialist and nurse, the management measure of reducing noise exposure was implemented.

Nanya's Proactive Safety and Health Improvement Plan for Clean Room Work Environment

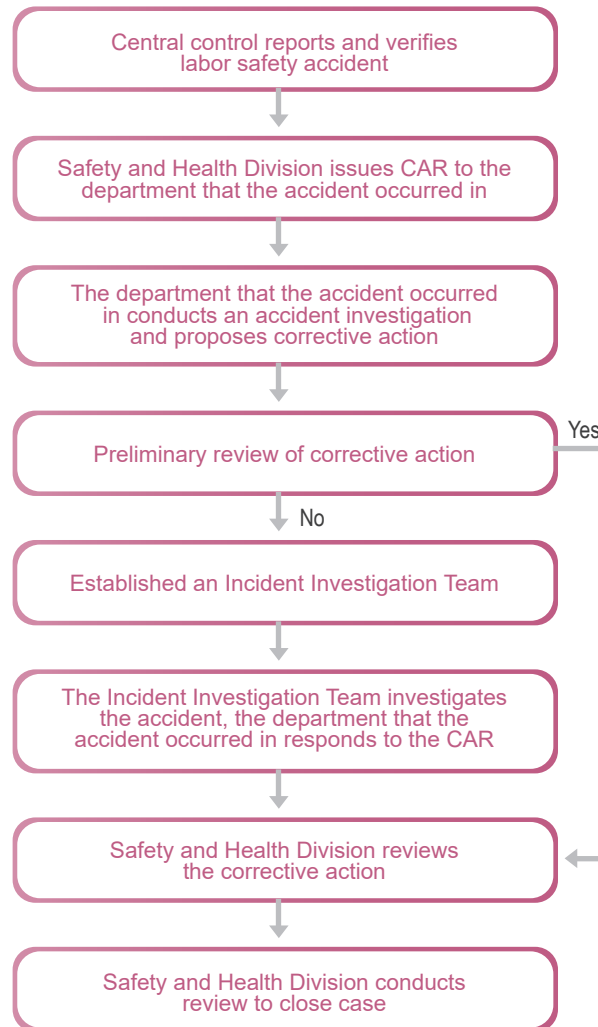
	2018	2019	2020	2021
No. of medium and high risks and improvement plans	12	17	12	9
Medium and high risk improvement rate	100%	100%	100%	100%
Amount invested in improvement plans (NT\$10,000)	158.4	396.4	383.7	341.8
Summary of Improvement Plan	Fall protection for machine maintenance personnel working on platforms, liquid suction device for residuals in empty buckets, pipeline support enhancement and protection measures for pipeline modification, residual risk management.	Earthquake-proof construction for clean room machines and material shelves, lighting improvement for clean room areas, efficiency improvement for clean rooms' local air exhaust equipment, leakage prevention measures for pipeline valve and chemical storage areas.	Work safety for working aloft in clean rooms (adding lifelines), lighting improvement for clean room areas, adding protection nets for material shelves in clean rooms, fall protection for machine maintenance personnel working on platforms, rust and leakage prevention for pipeline valves.	Clean room machine cover, shaker improvement, and work platform personnel collision prevention, power connector insulation improvement, local air exhaust equipment improvement, pipe coating prevention, and valve leakage prevention measures.

Statistical Analysis of Safety and Health Organization, Accident Investigation, and Disabling Injuries

Nanya places great importance on occupational safety and health. Occupational safety and health committee meetings are held every month at a regularity higher than what is required by the law. Each meeting is directed by the executive vice president, while the whole process is participated by senior managers, department heads, and committee members. Labor representatives make up 39.7% of the committee members. They jointly review the achievement statuses of various safety and health management goals, accident investigations, and the performance of safety and health projects. To strengthen communication on health and safety issues, in addition to existing channels of the Company (e.g. opinion box on the homepage), each department has appointed dedicated personnel to collect inquiries from employees, matters requiring participation, and proposals through department meetings, SWAT, and the Safety & Environment Event Tracking System (SETS). The personnel directly contact, receive information from, respond to, and consult the Safety and Health Division, establishing smooth channels for safety and health management and communication.

When an accident is verified by central control after investigation (occupational accident, false alarm, incident that affects physical and mental health), the Safety and Health Division will issue a Corrective Action Request (CAR) to the department that the accident occurred in to conduct a preliminary investigation and take corrective action. Whether or not an Incident Investigation Team is established to cooperate with the investigation is decided based on the severity of the accident. The Safety and Health Division strictly reviews corrective action taken for accident investigation. The department that the accident occurred in must conduct root cause analysis (RCA), including direct and indirect causes, and propose improvement and prevention measures to close the case.

Nanya accident investigation process



Note: Incident Investigation Team: 1. Head of the department of the incident 2. Personnel of the department of the incident 3. Work safety personnel 4. Other (Nurse, contractor, construction supervisor, or other personnel) 5. Labor representative.

There was a total of 26 false alarms in 2021. The main improvement to false alarms this year is liquid leak alarm (77%), which is mainly caused by personnel not taking machinery offline when performing abnormality improvements or maintenance and old connectors of chemical pipes. Improvement measures that were taken include reviewing the procedures for constructing chemical pipes and connectors, and making important valves a part of daily inspections and periodic replacements.

Disabling injury frequency rate (No. of disabling injuries/Million work hours) and severe disabling injuries rate (No. of lost work days/Million work hours) were both 0 in 2021. However, there was 1 case of contractor personnel injured in the machinery installation and construction process in 2021, in which personnel stepped into a hole in the elevated floor and bruised his right calf. After investigating the incident, Nanya provided the contractor with a load-bearing acrylic plate to cover the hole in the elevated floor, and conducted a job safety analysis to reassess the risk of operating procedures as an enhanced improvement measure.

	2018		2019		2020		2021	
	Employees	Other workers who are not employees	Employees	Other workers who are not employees	Employees	Other workers who are not employees	Employees	Other workers who are not employees
Total work hours (hours)	5,974,816	330,592	6,398,888	345,824	6,778,840	404,054	6,872,456	339,387
Number of deaths resulting from occupational injuries (number of people)	0	0	0	0	0	0	0	0
Number of recordable occupational injuries (no. of people)	0	0	0	0	1	0	0	1
Occupational injury death rate	0	0	0	0	0	0	0	0
Rate of recordable occupational injuries	0	0	0	0	0.14	0	0	2.94
Number of occupational illnesses certified by physician	0	0	0	0	0	0	0	0

Note 1: The occupational injury death rate and rate of recordable occupational injuries is calculated based on million work-hours.

Note 2: There were no serious occupational injuries (excluding number of deaths and those who lost more than six months of work days) in 2021.

Note 3: In 2021, the Company had no financial loss resulted from compensations or fines as outcomes of lawsuits involving employee occupational injuries or occupational illness.

Note 4: Other workers who are not employees refer to contractors.

Note 5: Number of recordable occupational injuries is consistent with the number of occupational accidents reported by the Company.

Safe contract work, division of labor based on specialization

Contractor safety has always been an important safety and health management item of Nanya. We have also treated the personnel of contractors as our own employees, and show respect and gratitude to contractors for using their professional abilities, equipment, and technologies to assist Nanya in completing various projects. Besides monitoring quality and progress, we prioritize providing an excellent environment and management for projects to be smoothly and safely carried out. We provide guidance to personnel of contractors to abide by regulations and engage in safe behavior, in order to achieve zero disasters and zero accidents.

In order to further strengthen and optimize safety measures, Nanya established a grading system for all contractors that undertake construction works outsourced from the Company. The system exists not only to control contractors' quality and occupational safety and health standards, but also to protect their employees from occupational injury. We collect data on professional contractors for each type of project, evaluate their construction site, machinery, and equipment, their construction site safety management ability, technical ability, and past performance, and then divide contractors into Grade A/B/C based on their ability and performance. Contractors that are not assigned a grade can apply for an upgrade review. We also periodically convene contractor forums and provide a contractor platform, providing guidance for contractors to be upgraded according to their category, construction safety personnel, professional technicians, main technicians, sub-contractors, construction machinery, and performance. Safety and health management expenses are listed as a required item during budgeting, and safety and health facilities must be listed in detail and included in the construction specifications in the contract. Nanya manages contractors according to regulations and standards of Formosa Plastics Group, and also prepared an application form for controlled constructions, application form for hot work, application form for lifting and suspension cage operation, and high risk construction worker checklist. We also control and inform contractors of the work environment, hazards, and safety and health regulations to maintain construction safety.

The Company currently has a number of safety and health management mechanisms to maintain a safe work environment for workers, such as self-inspection conducted by each unit, inspection and proposals by personnel of the safety and health department, SWAT, and accident report investigations. The mechanisms are also applicable to contractors. Employees are encouraged to monitor contractors for unsafe conducts, and may report abnormalities to Central Control through the their team leader or safety and health personnel via safety and health management mechanisms for immediate tracking and improvement.

All personnel of contractors must take the contractor pre-entry safety and health training course before entering our factory. The purpose of the course is to inform them of work environment hazards, regulations that require compliance, and raise their safety awareness. Employees that serve as safety supervisors are required to complete the safety supervisor course required by internal regulations. This is to ensure that they are clear about the duties of a safety supervisor, in order to prevent an occupational accident from occurring.

Pre-entry Safety and Health Training for Contractors and Training Completion Rate

