

# 2008 Report of SAHTECH

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SAHTECH grows with many supports from government and industry in year 2008. 1200 factories received on-site technical services, and more than 9000 industrial safety and health professionals attended 120 SAHTECH's workshops and training courses. Technology activities of year 2008 were focused on assessment and control of potential SH risks associated with semiconductor, TFT-LCD, photovoltaic, LED, steel and chemical industries. Some activities are summarized as follows.

## **High-tech Safety Services**

Process safety analysis, business continuity management, and vapor-cloud dispersion modeling were provided to strengthen the safety and health (SH) capacity of 12" semiconductor, 6G TFT-LCD, photovoltaic and LED factories. SEMI S2 certification of process tools and abatement efficiency verification of local scrubbers are also provided. SAHTECH co-leads the ESH standard committee of Taiwan SEMI to help SEMI issue S26-environmental, health, and safety guideline for FPD manufacturing system in March. The Chinese version of SEMI S guidelines was also published in April, and the Council of Labor Affairs (CLA) was facilitated to amend the related regulations of silane safety in September.

## **Chemical Safety Services**

SAHTECH helps CLA implement the globally harmonized system of classification and labelling of chemicals (GHS) in Taiwan. 300 GHS trainers were trained, and the national GHS inquiry center, operated by SAHTECH, provides more than 360,000 services to industry. SAHTECH also helps government agencies deal with affairs of national chemical inventory initiative, SAICM, EU REACH, and toxic chemical safety. As the launch of Taiwan GHS by the end of year 2008, SAHTECH also provides technical services to numerous multi-national chemical companies to meet the regulation.

## **SH Management and Services**

Entrusted by CLA, SAHTECH continues playing an important role in amendment and promotion of labor SH policies and regulations such as Taiwan Occupational Safety and Health Management System (TOSHMS), and a SH capacity-building project for 14,000 small business units. SAHTECH also provides other technical services to various industries, including machinery/installation safety, industrial ventilation, electrical safety, and hazard communication.

## **Professional Commonweal**

SAHTECH actively supports numerous conferences of SH and green technology, such as those of International Occupational Hygiene Association, Taiwan Occupational Hygiene Association, Taiwan Safety Education Association, Taiwan SEMI, Taiwan Responsible Care Association, Taiwan Aerosol Research Association, Taiwan Super Critical Fluid Association, Taiwan Photo-catalyst Industrial Association, etc. 13 college students also received the internship/ scholarship of SAHTECH to advance their SH knowledge in year 2008.

SAHTECH will continue contributing expertise to promote SH technologies, help customers in line with international standards, involve in and care SH societies, and serves as technical supports of public agencies.

*SAHTECH was founded in year 2007 with the help from Chinese Industrial Safety and Health Association, CY LEE & Partners Architects, Fubon Insurance Co., Hermes-Epitek Corp, Tokyo Electron Ltd., ULVAC and Mr. Tony Lai. SAHTECH aims to be a major player in the field of SH technology and service in Far East. 15% of SAHTECH staffs hold Ph.D. degrees, and 52% have master degrees. SH experience of staffs is over 13 years in average, and many of them are certified professional engineers, certified SH personnel or certified OHSAS 18001 auditors in Taiwan.*

## **Summary of 2008 Chemical Management Plan of Globally Harmonized System (GHS) in Workplace**

The “2008 Chemical Management Plan of Globally Harmonized System (GHS) in Workplace” (the Project), is the 3rd year program of the Council of Labour Affairs (CLA) “FY2006~FY2008 3-year GHS Implementation Plan”. The objective of this 3-year implementation plan is to enhance hazard communication in workplace and improve workers’ health and safety by implementing GHS. This project consists of 12 tasks in the following three major core topics: (1) chemical hazard information and GHS technical tools development; (2) awareness-raising and education; (3) consultation service and implementation assistance to industries.

During April 2008 to November 2008, this project has delivered GHS labelling of 350 selected chemical substances, material safety data sheets (MSDS) examples of 350 selected chemical substances, and hazard information database of 1,000 chemicals. 2000 MSDS and Labeling examples of hazard chemical substances have been developed in this 3-year GHS Implementation Plan. These examples are the most demanded resource to assist industries to implement GHS. In addition, the expert system for mixture classification (GHS Classify) has been revised and distributed for industries’ use. In total, 276 qualified instructors have successfully completed their program in 4 sections of 2-day train-the-trainer events. GHS training course materials, labelling flashcards, flyers, posters, brochures, pictogram Flash motion pictures, and other are provided for education purposes. Currently, these instructors have delivered additional GHS seminars and training sections with more than 70,000 participants

In corporation with CLA’s programs for assisting small and medium

enterprise (SME) this projects also provided 3 sections of training for SME inspectors providing necessary training materials. The project also worked with associated labor units, enterprise units, and industrial park administration centers to hold awareness-raising seminars island wide. Currently, 20 GHS seminars have been held in 9 different cities/areas with 1480 participants. A MSDS reviewing pilot trial has been carried out in this project to assist in improving MSDS quality for industries. Such MSDS reviewing programs are common in many international private companies, such as in US, Canada, and Australia. In Korea, MSDS reviewing service is provided by KMOL KOSHA for SME (government funded service).

GHS consultation service is one of the most demanding tasks in this project. Four (4) issues of GHS-Update Newsletter have been published and forwarded to more than 10,000 recipients each issue. CLA official GHS website has been modified and updated with new features and latest news. Monthly average of GHS website visits exceeded 10,000 clicks. The project continued to invite membership registrations (currently 14,500+ companies and individuals) and consultation services to assist industries.

By the completion of this 3-year implementation plan at the end of 2008, the “Regulation of Hazard Communication of Dangerous and Harmful Materials” will enter into force of the first stage of compliance (e.g. by December 31, 2008). Local industries might not be able to complete all conversion due to prolonged international transitional periods for many countries (e.g. EU and Korea). According to the plan, CLA should assess the possible schedules of future full implementation of GHS. A national chemical substance inventory is required such task to manage all hazard chemical substance in workplace and other occasion, such as transport, consumer, toxic chemical substance and waste etc. It is

suggested to counsel and assist industries as priority in the first two quarters of 2009. Technical support should be provided for enhance implementation efficiency and accuracy beyond the end of this 3-year GHS implementation plan.

In addition, for domestic and international full implementation of GHS, the development of a national chemical substance inventory and the scheme of new chemical notification (NCN) should be initiated for future scope of GHS compliance and sound foundation of safe chemical management. This is also the most important scheme to upgrade our chemical management system in line with advanced international development based on GHS implementation.

## **Summary of National New Chemical Management Scheme**

For workplace safe chemical use management to prevent hazard chemical substances without appropriate evaluation causing labors' health and safety damages, Dubai Declaration (2006) UN SAICM suggests each country to develop chemical lifecycle management system. With the basis of GHS implementation, a sound safe chemical use management is crucial for safeguarding workers' health and workplace safety in line with international trend on chemical safety enhancement.

The objective of this project is to propose a system of new chemical substance notification suitable for Taiwan's workplaces. This project gathered and analyzed information of advanced countries including Japan, EU, Canada, US, Republic of Korea and China on new chemical management scheme. The results of such analysis were applied as the essences to propose a system for Taiwan's workplace new chemical management. GHS implementation, regulatory reform and other essential measures should be consolidated in the development of this new chemical substance notification system.

## **Summary of 2008 Pesticide/Insecticide Classification and Labelling Management Plan**

The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) is becoming a world-wide basis of chemical hazard classifications and labelling, including pesticide/insecticide domains. GHS implementation is beneficial for sound chemical management and safety information distribution of throughout the use lifecycle of pesticide/insecticide including transport, manufacturing, retailing, storage, use and disposal.

The “2008 Pesticide/Insecticide Classification and Labelling Management Plan based on the GHS” (the Project) aimed to deliver the following works: (1) collect and analyze WHO and FAO harmonization development of classification and labelling of pesticide/insecticide align with GHS ; prepare amendment of pesticide/insecticide labeling regulation draft ; (2) held two GHS training seminars ; (3) prepare 80 MSDS/SDS samples of selected pesticide/insecticide ; (4) assist two model companies in MSDS/SDS preparation ; (5) establish a pesticide/insecticide safety information platform ; (6) update pesticide/insecticide GHS official website ; (7) provide phone, FAX and web-based consultation to industries.

This project has accomplished information gathering of WHO and FAO latest development on GHS harmonization, gap analysis between current labeling regulation and GHS requirements, hold two GHS training seminars with 102 participants from 63 individual companies, MSDS/SDS samples of 80 selected pesticides/insecticides, GHS website upgrade and a web-based platform of safety information with 100 pesticides/insecticides. This project also delivered a MSDS/SDS preparing software as the tool to assist companies/industries

implementation GHS in a near future. Also through the GHS website, latest news and technical assistances are provided to target audiences. This project also worked together with two selected model companies in preparing MSDS/SDS in line with GHS. The objectives of this project are achieved with all these efforts are designated to future GHS implementation.

## **Summary of Technical Aids for the SBE Safety and Health Capacity-building Project**

Small business enterprises (SBE) , which have workers less than 50, are usually less cared by the government despite they are about 84% of Taiwan total enterprises in terms of number. SBE of Taiwan is very dynamic and also locally, it employs great part of labor workforce so as to make a great contribution to the social stability. However due to lack of safety and health (SH) capacity, the SBE also has higher SH injury rate (IR) as compared with medium size and large enterprises. Recent statistics indicates that the IR of SBE decreases insignificantly, but the IR of the rest improves dramatically. Therefore the Council of Labor Affairs (CLA) launches this SH capacity-building project for SBE, so called SH Dandelion Project, with aims to help small business improve their SH awareness and capacity.

This SH Dandelion pilot project consists of two parts. One part is CLA supports county governments to hire SH professionals and to organize SH free-service teams to disseminate SH brochure or information to SBE, and provide necessary consultation. The other part is a technical supporting sub-project. This sub-project provide service mechanisms, on-site-service technical tools, SH placards, training, and consultation to the county SH professionals and their local service teams. The supporting sub-project also serves as a data analysis and quality control center.

In year 2008, 420 members of 16 service teams were trained in their local counties, and 200 of them received advanced training. 162,000 copies of SH placards and guides were delivered. 14,000 SBE were visited, 83% of them had workers less than 30. Manufacturing sectors and construction related sectors were about 63% and 31% of the

receiving-service SBE. Among them 5000 SBE received two more technical assistances, and 160 of them received more intensive engineering-control assistance including financial support of SH installations. 156 SBE also received partial financial support for SH improvement of their own machinery, equipment and installations, the government support was around NT 3 million, approximately 40% of total improvement budget. 170 factories of tape, paint and printing industrial sectors were also received technical assistances. Around 20,100 pieces of recommendations were provided to the 14,000 SBE, and 12,560 pieces of further recommendations were provided to the 5000 SBE, received more technical assistances. Completion of improvement by implementing the technical or engineering recommendations was about 83%.

Preliminary statistics indicated that 20% reduction of injury rate, among the visited SBE, was achieved as compared with year 2007. By survey, the SBE expressed 98.7% satisfaction (on the scales 4 and 5 of a 5-scale survey) regarding the implementation of this on-site service, and 87.4% satisfied with the help. Most of them wish to continuously receive such assistance, including on-site training, subsidization on SH hardware improvement, and attending on-site experience-sharing seminars. In additions, sufficient training to upgrade the capacity of local service teams is a key successful factor for this Dandelion project. Data also indicates that provide training and focusing on the prevention of mechanical cutting and rolling, electrical shock, falling could be the major task of next year.

## **Summary of Quality Control for the Authorized Inspection Agencies of Dangerous Machinery and Equipment**

The project helped Council of Labor Affairs (CLA) effectively manage the inspection quality of the authorized inspection agencies (AIA) in the affairs of dangerous machinery and equipment (DME). Quality of AIA was improved by 10%, as compared with the deviations of inspection and accounting practices of year 2007. Results of this project are as follow:

### **I. Manage and upgrade the DME Inspection Information Management System (IIMS).**

1. Manage and upgrade the web-based version of IIMS, inspection statistical analysis system, inspection result system, and inspection data backup system.
2. Provide 11 training courses to the authorized DME inspectors and system administrators.
3. Handle other emerging DME related information system issues for the eight AIA and the three regional labor inspection offices (RLIO).

### **II. Monitor inspection practice and quality of AIA, and provide training.**

1. On-site monitor the inspection quality of AIA at 120 sites.
2. Provide 12 on-job trainings for AIA inspectors, and the participants are 304 in total, with course-satisfaction rate around 92%.

### **III. Manage DME inspection files.**

1. Digitize 27,066 electronic backup files of DME inspection documents. And unify the formats of 120,000 files.
2. Provide equipment identification sheets, welding details,

strength calculation sheets, and construction blueprints of 94 DME inspection files to AIA .

3. Manage and create the detailed computer searching list of 60,977 DME inspection files. And safely transfer the inspection documents to the designated secure places of CLA.

#### **IV. Review inspection fees, accounting and general affairs of AIA.**

1. Review AIA accounting practices, human resources, and general affairs.
2. Hold 3 conferences, and 3 promotion seminars of DME related, and the participants are 266 in total, with satisfaction rate around 89%.
3. Other emerging tasks.
  - i. Add new functions of tax-memo and series printing bar code to the AIA's IIMS.
  - ii. Hold the joint meeting of hydrogen tank car inspection among CLA, RLIO, AIA and Taiwan Industrial Gas Association.
  - iii. Hold 2 DME related seminars, and the participants were 79 in total, with satisfaction rate around 87%.
  - iv. Conduct the AIA performance review.