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2012 New Year Message

KOSHA will be a 'Safety and Health Agency' keeping in tune with the people.

3rd January, 2012



My valued colleagues, employers and workers across the country and those in the safety and health industry!

As we look ahead to 2012, I want to wish everyone a happy and healthy New Year.

This year is the year of the dragon. The dragon symbolizes courage, hope and soaring to new heights. I hope 2012, year of the Dragon, proves to be roaring successful year for you and your family.

This year, however, also is expected to be a difficult one.

The economic recession following the global financial crisis seems to affect all the industries.

The KOSHA, under such a circumstance, will strive to help the Korean economy recover and respond to a rapidly changing global environment by providing the best service to our customers so that workers can be safe and healthy.

In addition, KOSHA proposed four major strategies: pursuing tangible performance, realizing cooperative relationship, making creative workplace and encouraging employee's participation-based environment all of which will help the agency achieve a new vision to be a 'safety hub focusing on occupational accidents prevention that keeps in tune with the people.

To that end, I want to emphasize and share following ideas with you.

First, KOSHA has to concentrate on prevention of occupational injuries and illnesses in the top 3 sectors.

More than 90% of occupational injuries and illnesses are coming from the manufacturing, construction and service sectors. That's why we have to reduce accidents in these sectors first to reach the goal of advanced nation's rate of injury and illnesses.

As part of these efforts, KOSHA will expand fiscal support to manufacturing sector with workers less than 50 to improve the safety and health related facility with the current visiting consultation program. At the same time, the agency will strengthen monitoring, training and patrolling activities by experts with rich experience for the small scale construction site with less than 2 billion won.

KOSHA Newsletter



KOSHA will also work hard to prevent accidents especially in the top 7 service industry including building management sector in terms of accident's frequency. For instance, it will train employers and improve facilities by setting up the network with other organizations.

Second, KOSHA will introduce a new accident prevention program which is provided in a timely manner.

We have to provide safety and health service to workplaces when they need it most. This is the way to reduce the number of injuries and illnesses.

KOSHA will send experts to the workplace when there's accidents within a month to analyze the causes of accidents providing seamless service to prevent it happen again through 'Timely Technical Assistance Project'.

Also, we will lay a firm ground for the prevention of accidents by supporting customized but also comprehensive technology, education and fiscal plan for newly established workplaces.

Third, KOSHA needs to settle down independent safety and health program in the workplaces.

Many advanced countries including OECD members choose to have independent safety and health management system based on self risk assessment rather than government oriented law enforcement and regulations.

Such a trend requires us to accept a new system under which individual companies and unions can investigate and improve hazardous factors and risks on their own.

To that end, KOSHA will lay a foundation for independent safety and health management by expanding demonstration sites of the 'Voluntary Risk Assessment Program' which will begin from 2013.

Furthermore, the KOSHA will build the accident prevention system between parent companies and contractors through safety and health leaders' group. At the same time, we plan to activate the workplace required to submit 'harm and hazard prevention plan' and expand 'KOSHA 18001 certification' to ensure safety before the accident.

Fourth, KOSHA will resolve preemptively sectors which are vulnerable to occupational accidents.

We witnessed the increased rate of injuries and illnesses in the transportation, warehousing, communication and other specific types of sector.

As a result, KOSHA decided to set up a comprehensive safety and health plan for sectors that experience frequent accidents such as small sized workplace, overland transport and special cargo sector to prevent disaster.

KOSHA will also investigate and set the standard of the safety and health environment for workers in the parcel service, quick delivery service, culture and art industries.

Alongside with these initiatives, the KOSHA is committed to strengthen monitoring of occupational diseases which is a social issue with increasing number of chemical materials and new technology development.



Finally, KOSHA will continue to work hard to enhance the awareness about safety and health of workers.

Today's occupational safety and health industry requires us to not only improve facilities or equipment but also to support workers' education and occupational health by changing the safety awareness. Therefore, we have to develop and distribute various kinds of media program and strengthen the safety and education culture customized for each industry.

In particular, KOSHA has to respond aggressively to increasing demand for safety and health by developing and distributing safety and health application for the smart phone and content that has QR(Quick Response) code to go together with rapid spread of smart phones.

In addition, we prepare to increase fiscal support to meet the workers' needs to enhance their health, and to expand health center for them.

My valued colleagues, employers and workers across the country and those in the safety and health industry!

A new year has just begun with full of hope.

We have capacity which helped us overcome economic crisis before as an exemplary model in the world.

I believe crisis can be another opportunity.

We will transform the crisis into opportunity by accepting new trend of change to reach our goal.

I hope that people in all industries gather their capability in 2012 to secure safety and health level of advanced nations. Also we will get out of the economic crisis to be a better Korea.

The KOSHA will work hard to lay a firm ground to boost the awareness of safety across the society and put it into action.

I want to wish all of you a happy and healthy new year once again and hope you always remain with your safety at workplace and in the community.

Thank you.

Baek . Hun-ki

President. **Baek Hun Ki**

Korea Occupational Safety and Health Agency



Announcement of melioidosis warning alert

27th January, 2012

The Korea Occupational Safety and Health Agency (KOSHA, President : Baek Hun Ki) said on the 26th that it announced a melioidosis warning sign recently for those working outside the country.

Melioidosis is an infectious disease caused by a bacterium, found in soil and water. The mode of infection is believed to be either through a break in the skin, or through the inhalation.

Symptoms may include lung nodules and pneumonia killing people when they are serious.

The first confirmed case of melioidosis in Korea was reported in 2003 from a person who had just come back from the business trip to the Southeast Asian region. There have been 7 confirmed cases of melioidosis and three of them have died up until now. The first fatal confirmed case was in 2008.

The agency recommends people to avoid traveling to endemic areas such as Southeast Asia and Australia. The KOSHA, however, said that workers or travelers who already are there or will be there must not touch the soil or rain in the region. You would be better not to go out especially when you have scars on your skin according to the KOSHA which recommends people to wear a mask.

The agency released the document containing melioidosis infection route, clinical features and prevention on the website. It also requires businesses to take it to train workers who are abroad.

Mr. Jeong, Director at Occupational Health Department, from KOSHA said, “returning workers abroad safe and sound is all the more important who are devoted themselves to contribute to develop the Korean economy. KOSHA will work hard to protect the health of not only workers on our soil but also those working overseas.”





KOSHA alert on cold-resistant substances

Recurrence Prevention by Putting Alert Sign from the Manufacturing Process Stage

2nd February, 2012

Workers in the construction site died recently who got poisoning after they drank boiled cold-resistant substance in the instant cup noodle, not knowing what it is, which is a chemical material that helps concrete resist freezing. The Korea Occupational Safety and Health Agency, KOSHA, is coming up with measures not to make such an accident happen again.

The KOSHA had a meeting with cold-resistant materials manufacturers at the headquarters on the 26th, January after which they decided to send the warning sign from the manufacturing process stage.

The cold resistant substance manufacturers, as a result, now put additional warning labels on the container cover adding to the one on the side of the products. Also, they will add color in the liquid in the process of manufacturing so that folks can identify it as hazardous substances.

The cold-resistant substance is colorless or yellow and normally used in the construction site. Workers in the site sometimes mistake it which is preserved in a plastic bottle for drinking water ending up with being poisoned to the toxic chemical material.

In particular, one died and nine fell ill on the 8th January after they ate instant cup noodle in a boiled cold-resistant substance that looked like water.

The KOSHA announced an alarm regarding the accident to prevent it happen again and called for caution to the construction businesses. Furthermore, the agency is producing warning labels to focus on giving them to small size construction companies.

Mr. Jeong, Director of Occupational Health Department, KOSHA, said “the KOSHA will strengthen cooperation with the Ministry of Employment and Labor to avoid cold-resistant materials poisoning. Meanwhile, the Agency will also continue to secure fundamental safety through cooperation with regarding manufacturers.”





Giving information to subcontractors on chemical materials

3rd February, 2012

The Ministry of Employment and Labor legislates an amendment that obliges contractors to provide information on hazardous chemical materials to subcontractors.

The ministry said that it will pass the modified bill to force the contractors to share information with subcontractors on chemical substances and regarding risk so that strengthened responsibility falls on the contractors.

This is because workers of the subcontractors died consecutively exposing themselves to a hazardous working environment: in December last year, the explosion killed four persons in Sejin heavy industries and killed one person and hurt six in SK energy's Ulsan complex. All of those who were affected were workers belonged to the subcontractors. The explosion got fatal as inflammable material leaked and employees from the subcontractor were working without any knowledge or information on the process

According to the Ministry of Employment and Labor, 19.3 to 29 people developed occupational disease and 5.1 died on average among 100,000 subcontractor workers in the repairing and renovating business of the chemical facility.

Indeed, the epidemiological survey from the Yeosu National Industrial Complex from 2006 to 2009 shows that cancer mortality rate for the subcontractor workers is five times higher than those of contractors.

The ministry added that chemical materials caused cancer reduced by 63% when information on hazardous of the chemical substances is shared between the two according to the Japan's survey.

The modified bill also contains the legal ground that allows investigation of risk and hazard of chemical materials that could develop potential disease. Only new chemical materials are the subject of risk and hazard investigation as of now.





Carcinogens Found at Semiconductor Manufacturing Factories

7th February, 2012

Occupational Safety and Health Research Institute (OSHRI), KOSHA released the result of research on working environment in the semiconductor plants, which begun in 2009. It had been conducted as part of following up studies, which was planed according to the results of the epidemiological cohort study for leukemia cases at semiconductor industries in 2008.

In this study, the working environment had been measured for 5 fabrication lines and 4 assembly lines in 3 factories. The research team investigated exposure level of carcinogens related leukemia, such as benzene, formaldehyde and ionizing radiation.

According to the research's result

- It was identified that benzene was found at fabrication line and some other process of the assembly line. Although benzene was not used in this process, it was generated as byproduct with volatile organic compounds by the chemolysis of resin. The amount of benzene from N.D.(not detected) to 0.00038 ppm in the fabrications and was from 0.00010~0.00990 ppm in the assembly line. OSHRI recommended the industry to improve the workplace to reduce the carcinogen.
- Formaldehyde was another byproduct. Around 0.001 to 0.004 ppm of formaldehyde was found at the fabrication line and there is no difference that in ambient air. The amount of the formaldehyde released at the assembly line was some 0.002 to 0.015 ppm exceeding a bit the amount of the natural level in the air.
- Ionizing radiation reached 0.011 to 0.015 mSv/yr at both the wafer fabrication line and assembly line, which was below the personal exposure dose limit, 50mSv/yr.
- Arsenic is known to cause lung cancer, was found at ion implantation process. In some implantation maintenance process, 0.001 to 0.061mg/m³ of arsenic was found which exceeds the occupational exposure limit, 0.01mg/m³. In particular, higher risk of exposure to workers of subcontractors in the ion implantation maintenance process requires urgent measures.

The OSHRI plans to distribute health protection guide for workers in the semiconductor sector, based on the result of the research, within the first half of this year.

The Ministry of Employment and Labor(MOEL) believes that this research is very meaningful saying that it revealed possibility of generating carcinogen during the working process, adding that the three subject companies need to improve ventilation facility; to replace hazardous substances with safe materials; to monitor the work environment; to keep the special medical examination for workers and finally to introduce countermeasures to protect workers of subcontractors.

MOEL announced that overall semiconductor sector's working environment will be inspected and recommended the industry to have the risk assessment system based on the results of this research.



KOSHA's test guarantees export of explosion proof motor to 30 nations

10th February, 2012

IECEx Scheme of OSHRI's ExCB and ExTL were admitted by the International Electro-technical Commission on 8, February 2012, for its observance of the international standard. As a result, exporters from now on, are allowed to export electrical machinery and device such as explosion proof motor to thirty nations with only passing through the KOSHA's test.

KOSHA joined the IEC's IECEx in 2000 for the first time in Korea. The agency gets annual surveillance ever since becoming the member of the IEC and is given reassessment every five years to remain qualified as the international explosion proof certified agency. In this year's reassessment, Mr. Jim Munro, the Lead Assessor, evaluated as the chairman of TC31, IEC.

※ IEC/TC31: IEC-affiliated committee on explosion proof technology

IECEx Scheme is the mutually accepted international scheme for explosion proof electrical machinery, established by IEC in 1997, under the goal of "one standard, one test, one certification and one mark". KOSHA has issued around 300 certifications, acknowledged by 42 agencies in 30 nations.

Motors with explosion proof type for internal pressure were certified by the KOSHA, which were known for their quality and technology around the world, taking up 14 percent of the global market. The motor, with its safety, is used to prevent





Occupational injuries and illness status in 2011, all index was decreased.

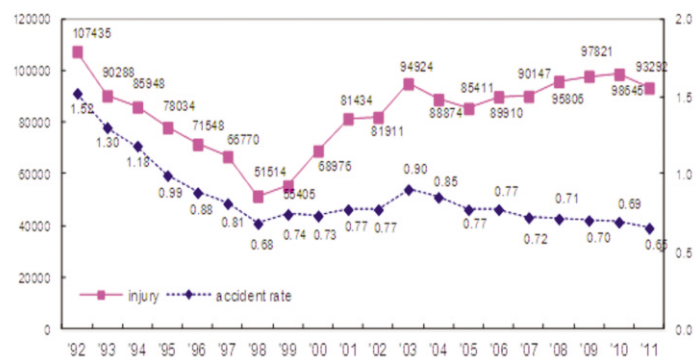
17th February, 2012

Accident rate decreased by 0.04%p; the fatal rate per 10,000 people reduced by 0.08p; the non-fatalities shrank by 5,353; and the fatalities cut by 86

Total of occupational accident for 2011 reduced in all index compared to 2010. According to the Ministry of Employment and Labor, the accident rate recorded 0.65% from 0.69% dropped by 0.04%p 2011.

- The non-fatalities decreased by 5,353 to be 93,292 from 98,645 of last year.
- The fatalities reduced by 86 to be 2,114 from 2,200 of last year.
- The fatal rate per 10,000 people recorded 1.47, going down by 0.08p from last year's 1.55.

〈The non-fatalities and accident rate for recent two decades〉



- The manufacturing industry reported the highest accident case in the category of industry, and slips or trips recorded the highest followed by crushes and falls from the height when seeing, by accident type.

Occupational injuries and illnesses in 2011

- ▶ by industry type : manufacturing-35%(32,294), business other than the manufacturing or service-32%(29,736), construction-24%(22,782).
- ▶ by the scale : Businesses with less than fifty workers for 82.4% or reported 76,885 of workers with injuries and illnesses.
- ▶ by injury type : Slips and trips-21%(19,664), crushes 17%(16,046), falls from the height- 15%(13,745). These top three types of accident account for 53% of all accidents.

- The Ministry of Employment and Labor will strengthen prevention measures to keep the trend going on. As part of its efforts, it will diversify its businesses to support financial and technical aid for start-ups and small businesses with workers less than fifty, all of which witness more accidents.
- Also, the ministry will focus on selecting and managing major fatal accidents considering the level of accidents.
- The ministry will punish violation of safety and health standard much more strictly and reinforce supervision of worksites' safety and health.

Example of Serious Accident in Manufacturing

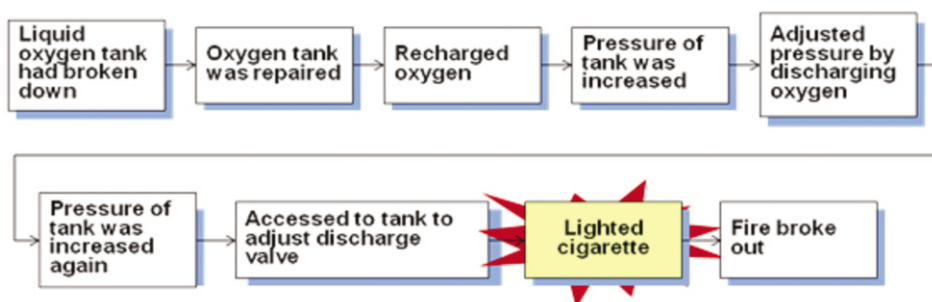
Fire caused by the light of cigarette and residual oxygen after charging liquid oxygen

I. Outline of Accident

- At 03:40 on Dec. 14, 2007 (Fri.)
- A fire broke out in the storage facility of liquid oxygen tank in XX Hospital in Gwangju
- When the victim (male, 43 years old), member of XX Gas Co., Ltd charged liquid oxygen in oxygen tank, discharged oxygen to adjust pressure
- And descended stairs while smoking to readjust pressure
- Due to residual oxygen around storage facility reacted by the light of cigarette.
- Fire caught the clothes of the victim, the victim suffered burn all over his body and died on Jan. 20, 2008 in hospital.



II. Process of Accident



- 2 members of equipment A/S team and the victim arrived to repair head type level gauge and pressure gauge of oxygen tank.
- After recovering residual oxygen in liquid oxygen tank, the victim departed to the factory in Gumi, Gyeongbuk and 2 member of equipment A/S started repair.
- The victim recharged oxygen in the repaired liquid oxygen tank, and after that the equipment A/S team checked operation of the gauge and departed.
- When pressure of tank increased up to 9kg/cm², the victim opened discharge valve (Type : Glove V/V) in the bottom of tank for 10 seconds to discharge liquid oxygen and decrease pressure as 7kg/cm².
- After a while, pressure of tank increase up to 9kg/cm² again, and manager of equipment requested reconfirmation. When the victim at the top of storage facility descended stairs while smoking to adjust discharge valve again, suddenly a fire caught in the clothes of the victim.

※ Storage facility of liquid oxygen tank is in open-top semi-basement structure.



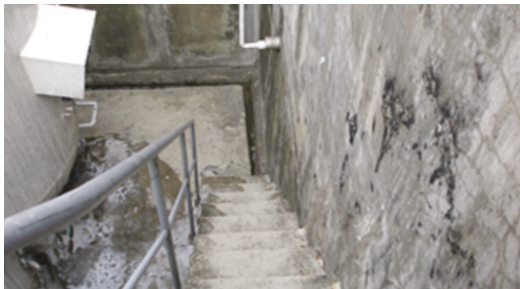
• Accident Situation Map



• Stairs of the storage facility where the fire broke out



• Stairs of the storage facility where the fire broke out



III. Reason of Accident

• Do not dilute and ventilate discharged liquid oxygen sufficiently

- When the compressed oxygen in liquid oxygen tank can be discharged and cause accidents such as fire and burn, final outlet should be installed
- To ventilate discharged gas to a safe place and dilute / ventilate it swiftly. However, liquid oxygen was discharged in the basement with poor ventilation, massive liquid oxygen in basement ignited the light of cigarette.

• Dangerous behavior when handling liquid oxygen

- Because the final outlet of oxygen tank is in the basement with poor ventilation, valve to discharge liquid oxygen should be handled slowly for enough dilution and ventilation. And considering the fact that liquid oxygen "can be ignited when contacted with flammable materials" see Material Safety Data Sheets, flammable materials should be prohibited. However, the worker conducted a dangerous behavior such as carrying cigarette, a flammable material and it caused the fire.

IV. Prevention of Accident

• Ventilate discharged liquid oxygen to a safe place

- When discharging liquid oxygen in the basement where workers can have accidents such as fire and burn due to discharge of gas or liquid compressed in pressure container,
- Final outlet should be installed in safe place such as ground to remove discharged liquid oxygen swiftly by diluting and ventilating it

• Need to educate safe work for workers who handle liquid oxygen and reinforce safety consciousness

- When discharging liquid oxygen that "can be ignited when contacted with flammable materials", to remove it swiftly by diluting and ventilating based on the installation status of final outlet,
- Workers should understand safe work related to valve operation (adjustment of discharge speed), etc.
- Measures to reinforce safety consciousness for handling of liquid oxygen should be conducted such as in-depth education on safety and health (ex. Prohibition of flammable materials in places with fire hazard).