

(Garuda Emblem)

Notification of Ministry of Industry

Re: Safety working measures for lead smelter from used batteries

By the virtue of clause 18 and clause 19 of the Ministerial Regulation No. 2 (B.E. 2535 (1992)), issued pursuant to the Factory Act B.E. 2535 (1992), the Minister of Industry hereby issues the Ministerial Notification as follows:

A lead smelter from used batteries shall establish a safety working measure and safety measure relating to machinery, equipment being employed in a factory in accordance with the following prescribed criteria and procedure.

Article 1 A lead smelter from used batteries shall be as follows:

(1) Storage facility for used lead plates and materials that may generates lead particulate shall be a closed room that be able to prevent distribution of lead particulate from such storage facility. Air being emitted form such storage facility shall be treated so that amount of lead contamination does not exceed prescribed value in the Ministerial Notification regarding industrial emission standard.

(2) Storage facility for used lead plates shall equip with roof covering all storage area and curtains with solid wall to prevent rain splash into a storage area and distribution of lead.

(3) Storage facility for used lead plates and materials that may generates lead particulate and storage facility for used lead batteries shall install lead decontamination system to decontaminate vehicles and all equipment before leaving such facility.

(4) Sorting facility for used lead plates, storage facility for used lead plates and lead smelting facility shall be adjacent to each other. Transfer and transport of raw material to smelting furnace shall be done with safety procedure with prevention of lead distribution.

Article 2 Machinery and equipment being employed in a factory shall be as follows:

(1) Secondary smelter shall be closed system throughout smelting process and shall have air pollution collection system with sufficient capacity and efficiency to collect polluted air from points of raw material feeding or waste transferring from a smelter. Air pollution control system of sufficient capacity and efficiency shall be installed for each smelter.

(2) There shall be machinery that is used for separating out lead plates from used lead batteries. There shall be dust control system with sufficient capacity and efficiency to prevent distribution of lead during separation process. The separated lead plates shall be stored in a storage facility for lead plates only in a safety manner to prevent lead distribution.

Article 3 Safety measure for workers shall be as follows:

(1) It is not allowed to separate out lead plates from used lead batteries manually.

(2) An entrepreneur shall arrange for the following.

(2.1) Personal protective equipment consists of helmet and mask for protection of dust and chemical vapors, protective cloths, latex gloves, and safety shoes, particularly during operating hour in a storage facility for used lead plates and separating facility for used lead plates.

(2.2) Shower room, washing sink, and cloth changing room with suitable quantity with numbers of workers in a factory.

(2.3) Drinking or eating area in a distance of not less than 20 meters from a building or as prescribed by Department of Industrial Works. Drinking or eating is prohibited in a factory building.

(3) An entrepreneur shall arrange health examination for worker at least twice a year for checking level of lead in bloodstream and urine. The report on health examination of workers shall be submitted to Department of Industrial Works every 6 month. Once it is found that a worker has level of lead in bloodstream or urine exceeding the standard limit level, such worker shall be transferred to work at other facility that has no posed danger from lead or other appropriate places.

(4) Lead concentration in working area shall not exceed 0.15 milligrams per cubic meter of air.

(5) Lead concentration in any point of the land boundary of a factory shall not exceed 0.01 milligrams per cubic meter of air.

Article 4 Safety measure regarding lead distribution shall be as follows:

(1) Lead contamination in effluent and rainwater discharging from a factory shall be inspected every 3 month.

(2) Lead contamination in surface water reservoir closest to a factory shall be inspected once a year.

(3) Lead contamination in groundwater from shallowest groundwater reservoir shall be inspected. There shall be at least three sampling points for analysis: at least one point at upstream and at least two points at downstream. Every sampling point shall be distant from a factory building not more than 20 meters or as prescribed by Department of Industrial Works. Lead contamination in groundwater shall not exceed 0.05 milligrams per liter in average.

(4) Lead contamination in surface soil from the area which is closest to a factory building or other places prescribed by Department of Industrial Works shall be inspected once a year.

(5) Lead contamination in surface soil from the area in the vicinity of a factory building within a distance of not more than 20 meters or other places prescribed by Department of Industrial Works shall be inspected once a year. Average total lead concentration shall not exceed 100 milligrams per one kilogram of soil and soluble lead concentration shall not exceed 1 milligram per one kilogram of soil.

Article 5 Air quality shall be inspected and reported to Department of Industrial Works every three months as follows:

(1) Quantity of air emitted from every installed air pollution control equipment.

(2) Quality of air emitted from every installed air pollution control equipment, by reporting the following parameters.

- Sulfur dioxide
- Carbon monoxide
- Chlorine
- Lead particulate
- Total dust

(3) Air quality, only lead particulate, at the border of a factory in a downwind direction from a factory building. Wind direction should be reported during inspection.

(4) Influent air quality, only lead particulate and total dust, before entering air pollution control equipment.

(5) Air quality in total working area, excluding storage facility for lead plates.

This shall, thus, enter into force on the day following the date of its publication in the Government Gazette.

Announced on the 27th April B.E. 2544 (2001)

(signed) _____
(Mr.Suriya Jungrungreungkij)
Minister of Industry

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