

Ordinance on Prevention of Anoxia, etc.

Ministry of Labour Ordinance No. 42 of September 30, 1972

Latest Amendments:

Ministry of Labour Ordinance No. 41 of October 31, 2000

[In Japanese](#)

The Ordinance on Prevention of Anoxia, etc., conforming to the Industrial Safety and Health Law (Law No. 57 of 1972) shall be enacted as follows in order to enforce the said Law.

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Chapter I. General Provisions

(Duties of the Employer)

Article 1. The employer shall make efforts to establish working methods, maintain a proper working environment and take measures necessary for preventing anoxia, etc.

(Definition, etc.)

Article 2. In this ordinance, the meanings of the terms are as defined respectively in the following items:

- (1) Oxygen deficiency: States under which the oxygen concentration in the air is less than 18%.
- (2) Oxygen deficiency, etc.: The state defined in the preceding item or the state in which the concentration of hydrogen sulfide in the air is 10ppm or more.

- (3) Anoxia: The symptom observed in one who has inhaled oxygen-deficient air.
- (4) Hydrogen sulfide poisoning: The symptom observed in one who has inhaled the air in which the concentration of hydrogen sulfide is 10 ppm or more.
- (5) Anoxia, etc.: Anoxia or hydrogen sulfide poisoning.
- (6) Hazardous work of oxygen deficiency: Those jobs to be carried out in places with the hazard of oxygen deficiency (hereinafter referred to as "oxygen-deficient place") designated in [Attached Table 6 of the Enforcement Order](#) (hereinafter referred to as "[Cabinet Order](#)") of the Industrial Safety and Health Law (Cabinet Ordinance No. 318 of 1972).
- (7) Class-1 hazardous work of oxygen deficiency: The oxygen deficiency-hazard work other than class-2 hazardous work of oxygen deficiency out of the oxygen-deficiency-hazard works.
- (8) Class-2 hazardous work of oxygen deficiency work: The work to be carried out in the oxygen-deficiency-hazard place designated in item 3-3, item 9 or item 12 of [Attached Table 6 of the Cabinet Order](#) (to be restricted to the places designated by the Minister of Health, Labour and Welfare as the places with the hazard of anoxia and hydrogen sulfide poisoning for the places designated in the said items) from among the oxygen-deficiency-hazard places.

Chapter II. General Preventive Measures

(Working Environment Measurement, etc.)

Article 3. For the workplace designated in [item 9 of Article 21 of Cabinet Order](#), the employer shall measure the concentration of the oxygen in the air before having the workers start the day's work, providing that the concentrations of both the oxygen and hydrogen sulfide shall be measured for workplaces where class-2 hazardous work of oxygen deficiency is to be carried out.

2. When the employer has made the measurements of the oxygen concentrations in the air provided for by the preceding paragraph, he shall make a record of the items given below, every time the said measurements have been made, and shall keep the recorded results of the said measurements in custody for a period of three years.

- (1) Date and time of the measurements.
- (2) Method of measurement.
- (3) Places at which the said measurements were carried out.
- (4) Conditions of measurements.
- (5) Results of the measurements.

(6) Name of the measurer.

(7) Outline of the measures taken for prevention of anoxia based on the results of the measurements.

(Measuring Instruments)

Article 4. When the employer has workers engage in hazardous work of oxygen-deficiency, he shall provide the instruments necessary for measurement of oxygen concentration in the air stipulated in Paragraph 1 of the preceding Article, or shall take measures for enabling the workers to easily make use of said instruments.

(Ventilation)

Article 5. The employer whose workers engage in hazardous work of oxygen deficiency shall keep the concentration of oxygen in the air at least at 18% or more in the workplace (the concentration of the oxygen shall be 18% or more, and the concentration of the hydrogen sulfide, less than 10 ppm in the case of class-2 hazardous work of oxygen deficiency) by installing an appropriate ventilating system except in cases where a ventilating system cannot be installed in order to prevent explosion or oxidization, etc., and where it is extremely difficult to install a ventilating system due to the nature of the work to be carried out.

2. The employer shall not be allowed to use pure oxygen while the workplace is ventilated conforming to the provision of the preceding paragraph.

(Use, etc., of Protective Equipment)

Article 5-2. In the case designated in the conditional clause of paragraph 1 of the preceding Article, the employer shall provide air respirators, etc., (air respirators, oxygen respirators or air-supplied respirators; the same applies hereinafter) in a number equal to or more than the number of the workers to engage in the same work at the time for use of the workers.

2. In engaging in the work set forth in the preceding paragraph, the workers shall use the air respirators, etc., if directed to do so by the employer.

(Safety Belts, etc.)

Article 6. The employer whose workers engage in hazardous work of oxygen deficiency in which workers could fall due to anoxia shall have the workers wear safety belts (the safety belts designated in item 40, [Article 13 of the Cabinet Order](#)) and other life lines (hereinafter referred to as "safety belts, etc.")

2. In the cases as mentioned in the preceding paragraph, the employer shall provide facilities to enable the said workers to attach the said safety belts, etc., safely and properly.

3. In cases as described in paragraph 1, the workers, when directed to wear the safety belts, etc., shall make use of the safety belts, etc.

(Check of Personal Protective Equipment)

Article 7. The employer who is to have its workers equipped with air respirators, etc., conforming to the provision of [paragraph 1 of Article 5-2](#) or the safety belts, etc., conforming to the provision of paragraph 1 of the preceding Article engage in hazardous work of oxygen deficiency shall check the condition of the said air respirators, etc., or the said safety belts, etc., and the equipment set forth in paragraph 2 of the preceding Article before starting the day's work and repair or replace them immediately if defective.

(Checkup on Number of Workers Concerned)

Article 8. When the employer has workers engage in hazardous work in oxygen-deficient air, he shall make a checkup of the number of workers when he makes the said workers enter into or go out of the place at which the said work is carried out.

(Prohibition of Entrance)

Article 9. When the employer has workers engage in the said work in oxygen-deficient places or in the vicinity of the said places, he shall prohibit workers other than those who engage in the hazardous work in oxygen-deficient air from entering into the said oxygen-deficient places, and shall put up a notice to that effect at a conspicuous place.

2. The workers other than those who engage in the hazardous work of oxygen deficiency shall not be allowed to enter the entry-prohibited place designated in the provision of the preceding article at their own discretion.

3. The hazardous places of oxygen deficiency provided for by the preceding paragraph shall not be subject to the application of the provision of [item 4 of paragraph 1 of Article 585 of the Ordinance on Industrial Safety and Health \(the Ministry of Labour Ordinance No. 32. 1972, and hereafter called "Safety and Health Ordinance"\)](#) (restricted to the portion relating to oxygen concentration and hydrogen sulfide concentration in the air).

(Communications)

Article 10. The employer whose workers engage in hazardous work of oxygen deficiency in any place adjacent to a workplace which may induce oxygen-deficiency, shall provide the means of communication between such workplaces.

(Operation Chiefs)

Article 11. For class-1 hazardous work of oxygen deficiency, the employer shall select an operation chief for hazardous work of oxygen deficiency from among those who have finished the skill training course for class-1 or class-2 operation chief for hazardous work of oxygen

deficiency, and, for class-2 hazardous work of oxygen deficiency, from among those who have finished the skill training course for class-2 operation chief for hazardous work of oxygen deficiency.

2. The employer shall have the operation chief for class 1 hazardous work of oxygen-deficiency perform the following functions:

- (1) Decide working methods and supervise the workers to prevent the workers from engaging in the said work from inhaling air deficient in oxygen.
- (2) Measure the concentration of the oxygen in the air at the workplace before starting the day's work; when the workers resume their work after once leaving the workplace; and when any abnormality has been detected with the physical condition of the workers, ventilating system, etc.
- (3) Check measuring instruments, ventilating equipment, air respirators, etc., to prevent the workers from suffering from anoxia.
- (4) Supervise the conditions under which the air respirators, etc., are being used.

3. The provision of the preceding paragraph shall be applicable with necessary modification to operation chiefs for class-2 hazardous work of oxygen deficiency, providing that "oxygen deficiency" in item 1 of the said paragraph shall be read as "oxygen deficiency, etc."; "oxygen" in item 2 of the said paragraph as "oxygen and hydrogen sulfide"; and "anoxia" in item 3 of the said paragraph as "anoxia, etc."

(Special Education)

Article 12. When an employer is to have workers engage in class 1 hazardous work of oxygen-deficiency, he shall give the workers special education concerning the following subjects:

- (1) Causes of oxygen deficiency.
- (2) Symptoms of anoxia.
- (3) Methods of using air respirators, etc.
- (4) Methods of evacuation in emergencies and first-aid treatment.
- (5) Items necessary for preventing anoxia in addition to those listed in the preceding four items.

2. The provision of the preceding paragraph shall be applicable with necessary modification to work relating to class-2 hazardous work of oxygen deficiency, providing that "oxygen deficiency" in item 1 of the said paragraph shall be read as "oxygen deficiency, etc.", and "anoxia" in item 2 and 5 of the said paragraph as "anoxia, etc."

3. Other than what is provided for in [Articles 37 and 38 of the Safety and Health Ordinance](#) and the preceding two paragraphs, the matters necessary for carrying out the workers' special education specified in the preceding two paragraphs shall be provided for by the Minister of Health, Labour and Welfare.

(Watchman, etc.)

Article 13. The employer whose workers engage in the hazardous work of oxygen deficiency shall take the measures necessary for quickly detecting the occurrence of such abnormal conditions, such as placing a watchman who constantly watches the progress of the work and quickly notifies the occurrence of abnormal conditions, if any, to the operation chief for hazardous work of oxygen deficiency or other persons concerned.

(Evacuation)

Article 14. If there is fear of oxygen deficiency in the workplace where the workers are engaged in hazardous work of oxygen deficiency, the employer shall immediately stop the work and have the workers evacuate the workplace.

2. In the case set forth in the preceding paragraph, the employer shall prohibit anyone other than those specially designated from entering the said workplace before confirming that the said workplace is free of oxygen deficiency and put up signs in conspicuous places indicating to that effect.

(Evacuation and Rescue Equipment)

Article 15. When an employer has workers engage in hazardous work in oxygen-deficient air, he shall provide air respirators, etc., ladders, fiber ropes, etc., thereby to enable the said workers to take refuge in an emergency, or devices necessary for rescuing the workers (hereinafter called devices for evacuation) for an emergency.

2. The provisions of [Article 7](#) shall apply correspondingly in respect to the devices for evacuation as provided for by the preceding paragraph.

(Use of Air Respirators in Rescue Work)

Article 16. In dispatching workers for the rescue of other workers suffering from anoxia, etc., in an oxygen-deficient place, the employer shall have the workers engaged in rescue work use air respirators, etc.

2. In the case as provided for by the preceding article, the workers concerned shall make use of the said air respirators, etc., when directed to use the said equipment, etc.

(Medical Examinations and Treatment)

Article 17. The employer shall have workers suffering from anoxia, etc., receive medical examination or treatment by a physician.

Chapter III. Preventive Measures for Special Types of Work

(Boring, etc.)

Article 18. When the employer has workers engage in work to excavate tunnels or other pits under circumstances where the said workers may suffer from anoxia resultant from the gushing out of methane or carbon dioxide, he shall investigate into the presence and conditions of methane and carbon dioxide in the places at which the said work is carried out or in their vicinity by means of boring and other proper methods, in advance, and shall establish the methods thereby to deal with methane or carbon dioxide, at the time of the said excavation, and the steps by which the excavation is to be made, and shall make the said workers engage in the said work as mentioned above.

(Measures concerning Fire-Extinguishing Equipment, etc.)

Article 19. In terms of the use of fire-extinguishing devices or equipment, which employ carbon dioxide, as installed in underground rooms, engine rooms, holds and other places to which sufficient ventilation is not available, the employer shall assume the measures as given below:

- (1) Make the said fire-extinguishing devices or equipment such that they cannot easily fall down by being bumped by workers, or such that their handles cannot be operated easily through accidental contact.
- (2) Prohibit the workers from recklessly operating the said devices or equipment, and also put up notices to that effect in a conspicuous place.

(Measures Concerning Refrigerators, etc.)

Article 20. When the employer has workers engage in work carried out in freezing rooms, refrigerators, closed cellar and other facilities or equipment tightly closed when in use, he shall assume measures thereby to keep doors or covers, which are installed at entrances or exits of the said facilities, or equipment, unclosed during the time the workers are engaged in the said work, provided that this does not apply in respect to a case in which the said facilities and equipment are in a structure that enables the doors or covers to be easily opened from the inside, or to a case in which informing or warning devices are installed inside the said facilities or equipment.

(Measures concerning Welding)

Article 21. When the employer has workers engage in welding with argon, carbon dioxide, or helium inside of tanks, boilers or reaction towers or in places where sufficient ventilation is not available, he shall assume either of the measures given below:

(1) Make ventilation thereby to maintain oxygen concentration in the air at not less than 18% in the places in which the said work is to be carried out.

(2) Have the workers use air respirators, etc.

2. The provisions of [Article 7](#) shall apply in respect to air respirators, etc., in item 2 of the preceding paragraph.

3. In a case as provided for by item 2 of paragraph 1, the worker, when directed to use an air respirator, etc., shall use the said equipment.

(Measures for Prevention of Gas Leakage)

Article 22. The employer whose workers engage in work to be carried out in a boiler, tank, reaction tower, hold, etc., where the piping for supplying the gas designated in item 11 of Attached Table 6 of the Cabinet Ordinance (hereinafter referred to as "inert gas") is installed, shall take the following measures:

(1) Close cocks or valves or install shut-off plates.

(2) Lock the valves, cocks, or shut-off plates which are closed in compliance with the provisions of the preceding item and put up notices, stating that the valves, cocks or shut-off plates shall not be unlocked in a conspicuous place.

2. In terms of valves or cocks installed to pipes to supply inert gases or the switches, push buttons, etc., to operate the said valves or cocks, the employer shall indicate the names of the inert gases supplied through the said pipes and the direction of opening or closing of the said valves and cocks, in order to prevent leakage of the inert gases from the pipes, resulting from erroneous operation of the said valves, cocks, switches, push buttons, etc.

(Measures concerning Gas Exhaustion)

Article 22-2. When the employer has workers engage in work in places where only insufficient draft or ventilation is available under conditions in which there could occur flowing of inert gases, as excreted from the safety valves, etc., installed in the containers in tanks, reaction towers, etc., into the said places, he shall assume measures to prevent the retention of the said inert gases in the said places, installing equipment, etc., by which to enable the inert gases, as excreted from the said safety valves, etc., to be exhausted directly to external sites.

(Prevention of Air from Being Rarefied)

Article 23. The employer whose workers engage in work to be carried out in a tank or reaction tower connected to the piping to draw out the inside air (not including the piping for ventilation) and facilities or equipment to be kept closed tightly while in use, shall take measure for keeping the covers or doors at the entrances of such facilities or equipment open while the workers are at work.

(Measures to Be Taken for Gas Piping Work)

Article 23-2. The employer whose workers engage in the work to install or remove the piping for supplying a gas mainly consisting of methane, ethane, propane or butane or the said gas including the air in the basement, duct or other places where the ventilation is poor, shall take the following measures:

(1) Completely shut off the supply of the gas so that the gas will not leak into the place where the installation or removal work or the piping is to be carried out.

(2) Ventilate the workplace so that the concentration of the air in the workplace can be kept at least at 18% or more, or require the workers to use the air respirators.

2. The provision of [Article 7](#) shall be applicable with necessary modification to the air respirators to be used conforming to the provision of item 2 of the preceding paragraph.

3. In the situation set forth in item 2 of paragraph 1, the workers shall use the air respirators, etc., if required to do so.

(Measures for Pneumatic Caisson Method)

Article 24. In executing work by pneumatic caisson method at a work site where the geologic formation designated in-a) or b) of [item 1 of Attached Table 6 of the Cabinet Order](#) or at a work site adjacent to the said geological formation, the employer shall examine the well or piping in the work site for possible leakage of oxygen-deficient air and the degree of leakage if any, and measure the oxygen concentration in the air whenever necessary.

2. When the result of the examination conducted conforming to the provision of the preceding paragraph indicates a leak of oxygen-deficient air, the employer shall notify the parties concerned to that effect, instruct what should be done for preventing anoxia and take necessary measures for preventing the workers from entering the work site where the oxygen-deficient air is leaking.

(Measures concerning Underground Rooms, etc.)

Article 25. When the employer has workers engage in work which is carried out inside underground rooms, pits, etc., where wells or pipes are provided which are adjacent to the stratum as provided in the a) or b) of [item 1 of Attached Table 6 of the Cabinet Order](#) or which lead to the said stratum, he shall provide measures thereby to prevent the inflow of air deficient in oxygen into the places where the said work is carried out, closing the places from which the said air deficient in oxygen may leak, installing equipment thereby to enable the said air deficient in oxygen to be exhausted directly to external sites, etc.

(Works for Modification, etc., of Facilities)

Article 25-2. The employer whose workers engage in work for the modification, repair or cleaning of pumps, piping or related facilities containing or once having contained putrid or easily decomposable objects such as sewage, decomposed sediment, waste water, or pulp liquid, including the disassembling of such equipment or facilities, shall take the following measures:

- (1) Decide the method and procedure of the work and notify the workers accordingly prior to the start of the work.
- (2) Designate a supervisor from among those workers who have the knowledge of how to prevent hydrogen sulfide poisoning to supervise the execution of the work.
- (3) Remove the hydrogen sulfide completely from the facilities to be worked on and close all the valves and cocks of the pipings connected to the said facilities to prevent hydrogen sulfide from flowing into the said facilities.
- (4) Lock all the valves and cocks closed conforming to the provision of the preceding item and put up a sign in a conspicuous place to prohibit workers from opening such valves and cocks.
- (5) Measure the concentration of hydrogen sulfide in the atmosphere surrounding the facilities to be worked on and install a ventilator or take other necessary measures if there is the possibility that the workers may be subject to hydrogen sulfide poisoning.

Chapter IV. Skill Training Courses for Class-1 and Class-2 Operation Chiefs for Hazardous Work of Oxygen Deficiency

(Subjects of Skill Training Courses for Class-1 Operation Chief for Hazardous Work of Oxygen Deficiency)

Article 26. The training course for class-1 operation chief for hazardous work of oxygen deficiency shall consist of theoretical training and practical training.

2. The theoretical training shall be provided on the following subjects:

- (1) Knowledge of anoxia and resuscitation as the first aid.
- (2) Knowledge of causes of oxygen deficiency and measures for prevention of oxygen deficiency.
- (3) Knowledge of personal protective equipment.
- (4) Related laws and ordinances.

3. Practical training shall be provided on the following subjects:

- (1) Resuscitation method as first aid.

(2) Oxygen concentration measurement method.

(Subjects of Skill Training Courses for Class-2 Operation Chief for Hazardous Work of Oxygen Deficiency)

Article 27. The provision of the preceding article shall be applicable with necessary modification to skill training courses for the class-2 operation chief for hazardous work of oxygen deficiency, providing that "anoxia" in item 1, paragraph 2 of the preceding article shall be read as "anoxia, etc." and "oxygen" in item 2, paragraph 3 of the said article as "oxygen and hydrogen sulfide."

(Details of Skill Training Courses)

Article 28. Other than what is provided for in Articles 80 through 82 of the Safety and Health Ordinance and what is provided for in this chapter, the matters necessary for the execution of the skill training courses for the class-1 and class-2 operation chief for hazardous work of oxygen deficiency shall be provided for by the Minister of Health, Labour and Welfare.

Chapter V. Miscellaneous Provisions

(Reporting Accidents, etc.)

Article 29. When workers are found to be suffering from anoxia, etc., or when a leak of oxygen-deficient air is detected through the examination conducted conforming to the provision of [paragraph 1 of Article 24](#), the employer shall notify the Chief of the local Labour Standards Inspection Office having the jurisdiction over the district where the work site concerned is located.