LSB Notification No.0331013
March 31st, 2009

Attn:
Directors of Prefectural Labour Bureaus,

Director General of Labour Standards Bureau,
Ministry of Health, Labour and Welfare
(official seal saved)

RE: Notification on Precautionary Measures for Prevention of Exposure etc. to Nanomaterials

Though enough is yet to be known about the health effects of nanomaterials which have been actively researched and developed in recent years, some studies reported that certain types of nanomaterials have adverse effects on mice and other rodents under specific conditions.

Therefore, based on the view of precautionary approach, the Ministry of Health, Labour and Welfare (hereinafter referred to as "MHLW") issued a notification No. 0207004 of February 7th, 2008, entitled "Notification on Present Preventive Measures against Exposure at Workplaces Manufacturing and Handling Nanomaterials" and has been working to disseminate it. In order to increase the efficacy of preventive measures against exposure to nanomaterials, it is necessary to provide a more specific management approach which reflects the actual conditions of the working sites. Therefore, the MHLW has held a series of expert panel meetings since March 2008,and the following summary report was released the other day.
(Refer to http://www.mhlw.go.jp/shingi/2008/11/s1126-6.html)

Based on the report, the MHLW has prescribed the precautionary measures for prevention of exposure etc. to nanomaterials as attached sheets of this Notification. The MHLW instructs each Prefectural Labour Bureau to publicize this Notification to relevant employers so as to be implemented by them.

The MHLW also requested the relevant organizations as well as the Director General of Research Promotion Bureau of the Ministry of Education, Culture, Sports, Science and Technology to publicize this Notification as shown in Annexes 1 and 2,respectively.

Consequently, the prior Notification (No. 0207004) shall be rescinded.

(Annex 1)

LSB Notification No.0331011
March 31st, 2009

Attn:
President, Japan Industrial Safety and Health Association
President, National Federation of Industrial Waste Management Association
President, Japan Electronics and Information Technology Industries Association
President, Japan Chemical Industry Association
President, Japan Chemical Exporters' Association
President, Japan Chemical Importers' Association
President, Japan Foreign Trade Council, Inc.
President, Nanotechnology Business Creation Initiative

Director General of Labour Standards Bureau, MHLW

RE: Notification on Precautionary Measures for Prevention of Exposure etc. to Nanomaterials

Thank you for your continued understanding and cooperation in the implementation of labour standards administration.

Though enough is yet to be known about the health effects of nanomaterials which have been actively researched and developed in recent years, some studies reported that certain types of nanomaterials have adverse effects on mice and other rodents under specific conditions.

Therefore, based on the view of precautionary approach, the Ministry of Health, Labour and Welfare (hereinafter referred to as "MHLW") issued a notification No. 0207004 of February 7th, 2008, entitled "Notification on Present Preventive Measures against Exposure at Workplaces Manufacturing and Handling Nanomaterials" and has been working to disseminate it. In order to increase the efficacy of preventive measures against exposure to nanomaterials, it is necessary to provide a more specific management approach which reflects the actual conditions of the working sites. Therefore, the MHLW has held a series of expert panel meetings since March 2008,and the following summary report was released the other day.

(Refer to http://www.mhlw.go.jp/shingi/2008/11/s1126-6.html)

Based on the report, the MHLW has prescribed the precautionary measures for prevention of exposure etc. to nanomaterials as attached sheets of this Notification. The MHLW would hope your organizations to understand the purpose of this measures and also requests you to disseminate this

Notification throughout the relevant organizations and enterprises so that preventive measures are taken in there.

Consequently, the Prior Notification (No. 0207003) shall be rescinded.

Just in case you didn’t know, related information on nanomaterials has been already provided on the website of JNIOSH (National Institute of Occupational Study and Health, Japan).

(Separate Attachment)

Measures for Prevention of Exposure etc. to Nanomaterials at Workplaces

1 Targeted Nanomaterial

In this document, “nanomaterial” refers to, among solid materials manufactured using elements, etc. as a raw material, a nano-object with at least one of the three dimensions of approximately 1nm－100nm and a nano-structured material composed of nano-objects (including matter composed of aggregated/agglomerated nano-objects).

2 Targeted Operations

In this document, “nanomaterial-related work” refers to manufacturing or handling of nanomaterials and other materials containing nanomaterials (hereinafter referred to as “nanomaterials, etc.”) (including manufacturing for research purposes, repairs and inspections of equipment or instruments in which nanomaterials are used), or disposal or recycling of products containing nanomaterials.

In addition, “nanomaterial-related work” shall include non-routine operations, of which daily repetition and continuance are rare.

3 Preventive measures against Exposure

(1) Basic Concept

Although researches and studies about adverse health effects of nanomaterials have been actively done, it is yet to be solved. Therefore, on the basis of precautionary approach, it is important to take preventive measures against exposure to nanomaterials.

By referring to the contents provided in this document, proprietors shall strive to reduce exposure to nanomaterials on the basis of actual conditions in terms of materials, processes, amount of handling, etc. This Measure shall target workers who are engaged in nanomaterial-related operations. However, necessary measures shall be taken for protecting other workers who are not engaged in nanomaterial-related operations in the same workplace.

This document provides measures which shall be taken in the relevant workplaces considering currently available data and knowledge under the situation that enough research data is not yet available to study preventive measures against exposure. Therefore, if some referential knowledge is available in a certain workplace and effective preventive measures can be taken based on the knowledge from the view of a precautionary approach, such workplaces are allowed to take their own measures regardless of measures given in this document.

(2) Investigation on Nanomaterials

For the purpose of taking preventive measures against exposure, etc., it is important to understand the properties, etc. of nanomaterials. Therefore, workplaces shall endeavour to gather detailed information about nanomaterials, etc. which are handled in nanomaterial-related works.

Information possibly provided by the manufacturers of nanomaterials, etc. shall include data on electron micrographs, particle size, and specific surface area, etc.

(3) Working Environment Management

a. Enclosure, etc. of Manufacturing and Handling Equipments

Except in cases where there is no possibility of workers' exposure to nanomaterials, etc. such as a case where nanomaterials are embedded into solid materials like resin, etc., in principle, manufacturing/handling equipments (i.e., equipments used for performing nanomaterial-related operations: the rest stays the same) shall have a sealed structure.

Also, except in cases where there is no chance of exposure, in principle, sealing, unmanning, and/or automation (hereinafter referred to as "enclosure") shall be applied to all activities that involve direct handling of nanomaterials, etc. by workers－such as recieving deliveries of raw materials; weighing raw materials and products; feeding into manufacturing/handling equipments (including mixing processes); collecting from manufacturing/handling equipments; cleaning, inspections, and repairing of manufacturing/processing equipments; and cleaning of containers,etc. In particular, mixing of powder consisting or containing nanomaterials, etc. with liquids or resins is highly likely to result in exposure to nanomaterials, etc., therefore, enclosure of manufacturing/handling equipments shall be adopted, or such operation shall be conducted in a glovebox.

Moreover, even in the operations of disposal or recycling of products, in consideration of the possibility that such products might contain nanomaterials or that, during such operations, nanomaterials, etc. might be dispersed in the working environment,. and when exposure to nanomaterials, etc. is possible, in principle, necessary measures such as enclosure shall be taken.

b. Installation of a Local Exhaust Ventilation System

In a location where manufacturing/handling equipments are to be installed for which enclosure cannot be taken, a local exhaust ventilation system or push-pull type ventilation system (hereinafter referred to as "a local exhaust ventilation system") shall be installed to prevent dispersion of nanomaterials, etc.

A booth-type hood is preferable for local exhaust ventilation systems. However, in a case

where manufacturing/handling equipments are large scale models, the installation of a push-pull type ventilation system or other appropriate system shall be installed based on the convenience of workers.

The following specific processes are included in the processes of manufacturing /handling nanomaterials, etc. which are required installation of a local exhaust ventilation system, even if which fail to achieve enclosure.

(a) The following processes conducted at workplaces manufacturing nanomaterials, etc. where nanomaterials, etc. having a potential of being dust and they need to be directly handled by workers;

1) Processes of collecting produced nanomaterials, etc. (except for automated processes)

2) Processes of weighing, packing, and packaging of produced nanomaterials, etc.

(b) The following processes conducted at workplaces handling nanomaterials, etc. in which nanomaterials, etc. having a high potential for dispersion are to be processed/handled:

1) Unpacking process (i.e., a process of unpacking packed containers containing nanomaterials, etc. for a feeding process to equipments)

2) Subdividing and Weighing process (a process weighing and taking a portion of nanomaterials for a feeding process)

3) Feeding process (a process of inputting nanomaterials, etc. into a hopper, etc.)

Even when a manufacturing/handling equipment is taken measures such as enclosure , access openings for maintenance and inspection shall be equipped with a local exhaust ventilation system or otherwise glove bags shall be used for such operations. Glove bag is a bag-like chamber with built-in gloves to provide local isolation of a part of pipes, etc. When it is installed in the area that is to be repaired or replaced, the glove bag shall have capacity to enable these operations to be fully enclosed.

In addition, after the local exhaust ventilation system is installed, the system shall be performed periodic maintenance and checks.

c. Dust Removal Measures of Exhaust Air

The outlet of a local exhaust ventilation system shall be directly open to outside air. If this is difficult to achieve, exhaust air from the ventilation system shall be discharged to outside air by connecting an outlet of the ventilation system to the existing exhaust duct. In that case, to prevent emission of nanomaterials, etc. to outside air, the local exhaust ventilation system shall be equipped with high performance filters that are capable of collecting such nanomaterials, etc.

In selecting filters to be used, in consideration of the agglomeration nature of dispersible

nanomaterials, etc., in the case that the particle diameter of nanomaterials, etc. and/or the status of agglomeration of nanomaterials, etc. are investigated, the results shall be considered to select an appropriate filter capable of collecting targeted nanomaterials, etc.

When such investigation is not to be conducted, a HEPA filter or the equivalent performance filter shall be installed.

Where large-scale manufacturing/handling equipments are present, when using local exhaust ventilation system equipped with HEPA filters, it is necessary to improve the performance of electric generators/exhaust fans and to replace HEPA filters more often in operations that may increase the dust generation potential of nanomaterials, etc. In that case, it shall be noted that prefilters installed before the HEPA filter could reduce the frequency of replacement of HEPA filters. Such prefilters include, for example, a bug filter.

d. Examination of the Concentration of Nanomaterials, etc. in Workplaces

In order to properly conduct preventive measures against exposure to nanomaterials, , etc., it is important to confirm the efficiency of preventive measures against exposure such as enclosure of manufacturing/handling equipments and installation of a local exhaust ventilation system and to understand the status of exposure to nanomaterials, etc. for workers who are engaged in nanomaterial-related work. Thus, workplaces shall endeavour to examine the concentration of nanomaterials, etc. in working environment. In this case, measurement of the concentration of nanomaterials, etc. in the working environment shall be performed not only at regular intervals but also at the time when the status of nanomaterial-related work changes.

Generally, in work environment, dust particles with a broad particle-size distribution exist, which are generated from the same source. Therefore, even with an instrumentthat is not designed for measuring nanosized particles, the results of measurement by such instruments are somewhat effective for the control of nanomaterials, etc. Thus, if an instrument designed for measuring nanosized particles is not available, a dust meter, etc. that can measure ordinary size particles shall be used.

Where possible, the following measurement instruments shall be used for nanosized particles. These instruments are SMPS (Scanning Mobility Particle Sizer), CPC (Condensation Particle Counter), and DC (Diffusion Charger-based Surface-Area Monitor), etc.

In the context of the actual management of the working environment, it is beneficial to identify the types of nanomaterials, etc. existing in the working environment of a workplace. Therefore, where possible, observations of the shape of and the composition analysis of nanomaterials, etc. shall be performed.

(4) Work Control

a. Preparation for Operation Rules

When workers are to be engaged in nanomaterial-related works, operation rules on handling of nanomaterials, etc. shall be prepared and the workers shall follow the content of the rules.

Then, the operation rules shall contain information about the health effects of the nanomaterials, etc., and working environment. Information about health effects shall be provided, for example, as descriptions in MSDS.

b. Cleaning of Floors, etc.

When cleaning floors and work benches in a workplace where nanomaterial-related works are to be performed, cleaning operations shall be performed by suctioning using vacuum cleaners with HEPA filters and other filters that are capable of collecting nanomaterials, etc.. However, when the suctioning is difficult or unsuitable to be performed, cleaning operations shall be performed by wiping with wet cloths.

In this case, it may be effective to add moisture to accumulated nanomaterials, etc. in advance and to wipe off them, but, in a case of water--shedding powder, introducing water may disperse the powder. Therefore, cleaning operations shall be conducted in consideration of both the status of the workplace and the properties of nanomaterials, etc..

In addition, cloths used for wiping of nanomaterials, etc. shall be placed into an impervious and hard-to-tear bag, then disposed in a proper way.

c. Prevention of Contamination in the Workplaces Where Nanomaterial-related Works are Performed and in the Outside Environment

Workplaces where nanomaterial-related works are to be performed shall be segregated from the outside environment and also, a decontamination area shall be provided in between to prevent nanomaterials, etc. from being transferred outside workplaces on working uniforms, etc.

Waste having a potential of dispersion of nanomaterials, etc. shall be placed into an impervious, hard-to-tesr bag and disposed in a proper way.

In addition, unauthorized persons shall be kept away from facilities performing nanomaterial-related works.

d. Use of Protective Equipment

(a) RPE (Respiratory Protective Equipment)

1) Where it is difficult to achieve enclosure or to install a local exhaust ventilation system, workers engaged in nanomaterial-related works shall use effective RPE. However, even if preventive measures against exposure (such as enclosure or installation of a local exhaust ventilation system,) are taken, when employers cannot confirm that there is no chance of worker exposure to nanomaterials, etc., the workers who are to be engaged in nanomaterial-related works shall use effective RPE.

The effective RPE shall be as follows: air-supply respirators such as supplied air-respirator; dust masks with a particle collection efficiency of 99.9% or higher; and face piece, face shield or hood-type PAPR (powered air purifying respirator) with a particle collection efficiency of 99.9% or higher that is in compliance with JIS T8157. Among these respirators, dust masks that have national certification shall be used.

2) In selecting RPE, by considering the expected amount of worker exposure to nanomaterials, etc. based on the status of preventive measures against dispersion and by referring to the attached document “Method for the Selection of Respiratory Protection Equipment”, RPE with an appropriate PF (protection factor) shall be selected.

In addition, RPE shall be selected for each workplace－for example, a workplace that requires explosion-proof measures, a workplace that is in uncomfortable hot environment, or a narrow workplace, etc.

3) In consideration of use in irregular or emergent situations, appropriate RPEs to be used for preventing exposure to nanomaterials, etc., shall be stocked in necessary numbers, and kept available and clean.

4) In selecting RPEs for workers, after checking the adequacy of fit between a face piece and worker’s face, the appropriate face piece shall be selected. Fit tests shall be performed every time the face piece is worn.

(b) Protective Gloves

Where workers are to be engaged in a nanomaterial-related work in which hand /skin contact with nanomaterials, etc. is probable, such workers shall have to use protective gloves made of appropriate materials to prevent adherence of nanomaterials, etc. to their skin.

Except in cases where clean conditions can be maintained by washing, etc., protective gloves shall be disposable.

If used and the protective gloves are disposed of, such gloves shall be put into impervious, hard-to-tear bags to be disposed of adequately.

When protective gloves are taken off, if skin contact with nanomaterials, etc. is

unavoidable or highly possible, it shall be necessary to wash the exposed or possibly exposed skin with soap, or to wipe off the skin with a cleansing cream, etc.

(c) Goggle-type Protection Glasses

When a worker is to be engaged in nanomaterial -related work, if eye contact with powder of nanomaterials, etc. or splashes containing nanomaterials, etc. is possibly occur, it shall be necessary for the workers to use goggle-type protection glasses.

(d) Protective Clothing

In a case where a worker is to be engaged in a nanomaterial-related work, when nanomaterials, etc. are possibly adhere on the work uniforms of the worker, protective clothing manufactured specially for nanomaterials, etc. shall have to be worn by the workers.

It is preferable that protective clothing are made of unwoven cloth. Effective and clean conditions shall be maintained by washing, etc.

If protective clothing on which nanomaterials, etc. are adhered is to be taken outside of the facility, the protective clothing shall be put into impermeable, hard-to-tear bags, to prevent them from spreading outside the facility.

(e) Keeping of Operation Records

With regard to a worker engaged in nanomaterial-related work, operation records shall be prepared that indicate the name of the worker, engaged period of the work, and general description of the nanomaterial-related work, and also shall be kept for a prolonged period.

(5) Health Care

With regard to a worker engaged in nanomaterial-related work, the employer shall implement regular health examinations under the Industrial Safety and Health Law or the Pneumoconiosis Law, and recognize the latest health conditions of the worker.

(6) Safety and Health Education

When workers are to be engaged in nanomaterial-related works, the workers shall be educated on: operation rules; physical and chemical properties of nanomaterials, etc.; health effects of nanomaterials, etc.; control measures for the work environment; preventive measures against exposure to nanomaterials such as the use of personal protective equipment; and measures of preventing fire and explosion.

For RPE, the related workers shall be given detailed instructions concerning the following: proper selection of RPE; method on how to put on the RPE; the measurement method of leakage based on the adequacy of fit between the face piece of respirators and the face; method of fit test; and storage and maintenance of RPE.

(7) Other Measures

a. Measures of Preventing Fire and Explosion

The following measures shall be necessary to be taken depending on the property of the nanomaterials, etc. handled, manufacturing/handling equipments, processes in a nanomaterial-related work, procedures of operations, etc.: the reduction of dust concentration; prevention of static electricity generation; the reduction of oxygen concentration in manufacturing/handling equipments, etc.

b. Response to Emergency Situations

When workers are to be engaged in nanomaterial-related works, the employer shall establish measures to be taken in case of incident or accident in advance, such as alarms, notification to other workers, or exposure preventive measures at a time when a large spill takes place.

In addition, first aid measures to be taken when workers exposed to nanomaterials, etc. shall be as follows: perform dust removal in a clean-air environment; if eye contact occurs, wash eyes thoroughly with water; if inhaled, gargle or rinse mouth; and if swallowed, spit it out, gargle and wash rinse mouth.

4 Dissemination of Information on Nanomaterials

In order to take preventive measures against exposure to nanomaterials or other necessary measures, relevant workers shall need to clearly recognize what they are handling when working with nanomaterials, etc. Obtaining information on precautions for handling nanomaterials, etc. can help such workplaces to take appropriate preventive exposure measures, etc. Since this kind of information is usually held by a person who is to transfer or provide nanomaterials, etc., such a person shall transfer the following information to the party to whom these nanomaterials, etc. are to be transferred or provided. Necessary informations are: the name and components of and precautions for handling such nanomaterials, etc. by labeling the container or package, issuing documents (MSDS) or by other ways.

（Attachment）

Method for the Selection of Respiratory Protection Equipment

When using respiratory protection equipment (RPE), it is necessary to select RPE with appropriate protection factor (PF) corresponding to the actual conditions of workplaces (for example, with or without measures for preventing dispersion of particles) or with assigned protection factors (APF). PF is a value that represents the protection performance of RPE and can be defined by the following equation:

$$PF = \frac{C_o}{C_i}$$

***PF* : Protection Factor** **C_o : Dust concentration outside facepiece, etc.**

C_i : Dust concentration inside facepiece, etc.

The above equation shows－the higher the PF, the less likely dust particles would leak into the respirator－ such RPE can be considered to have a low potential for worker exposure.

If it is impossible to make measurement of PF in workplaces, assigned protection factors (APF) provided by the respective competent authority should be used. APF is a representative value of multiple protection factors calculated by using test results. Therefore, APF is a minimum expected value that would be obtained when trained wearers put on properly functioning RPE correctly. Table 1 shows assigned protection factors that have been publicly announced as one of Japanese Industrial Standards (JIS).

When selecting RPE, one with the highest APF available should be basically selected. In a case where, specifically at industrial production sites, adequate facilitical measures cannot be taken on the basis of occupational hygiene, exposure to high concentration of nanomaterials can be expected, RPE with a higher APF should be selected. When it is possible to take appropriate measures, such as enclosure, unmanning, and automation (hereinafter referred to as “enclosure,”) of the process of manufacturing or handling of nanomaterials, etc., RPE with a lower APF can be selected. Also, when it is not possible to perform enclosure of such process but possible to install a local exhaust ventilation system or push-pull ventilation system (hereinafter referred to as “local exhaust ventilation system”), RPE with an intermediate level of APF can be selected. When selecting RPE to be used for testing and research institutes, in a case where adequate facilitical measures cannot be taken on the basis of occupational hygiene, exposure to high concentration of nanomaterials can be expected, RPE with a intermediate or higher level of APF should be selected. However, when it is possible to take measures (enclosure) and/or to install a local exhaust ventilation system, RPE with a smaller APF can be selected. Based on these concepts, information on the selection of RPE for common workplaces manufacturing/handling nanomaterials and testing/research institutes is

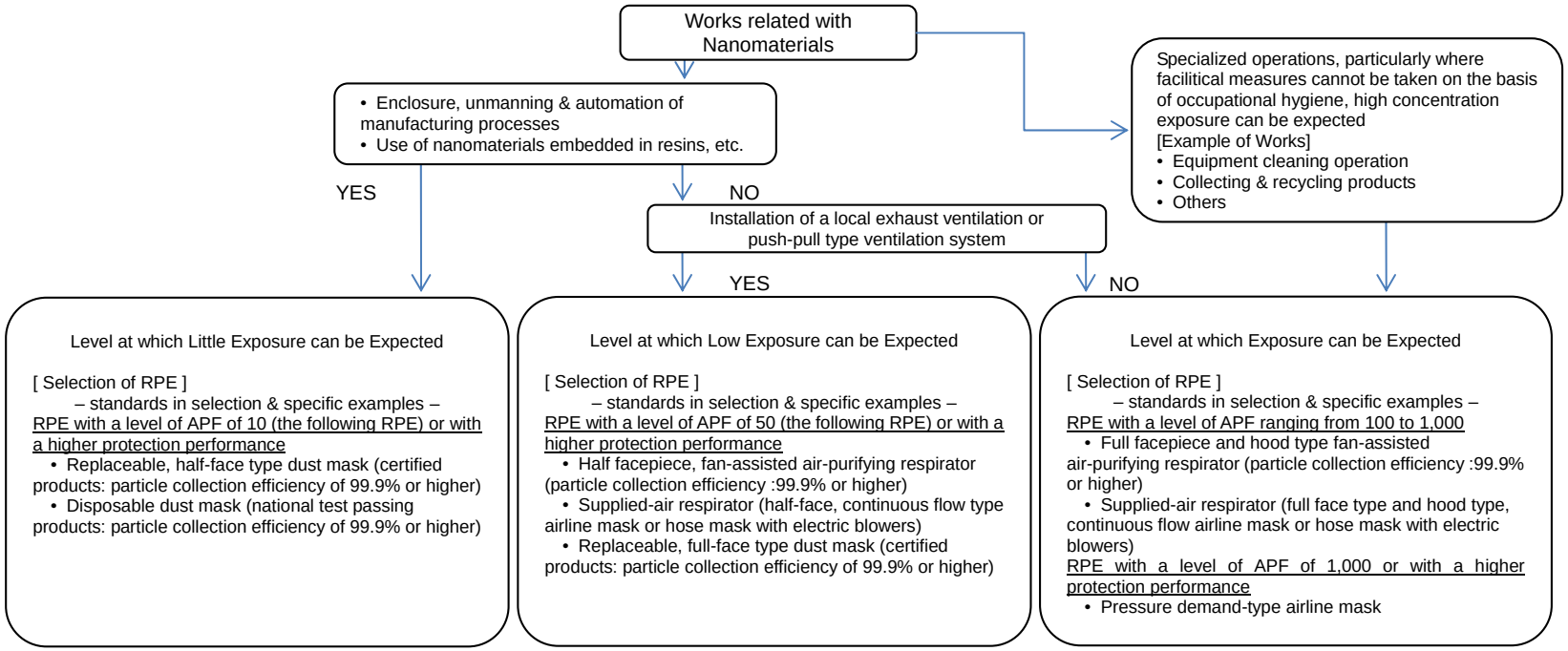
provided for reference purpose, in Fig.1 and Fig. 2 and in Table 2.

In preparing these Figures and Tables, the following things were taken into consideration:

- If the results of work environment measurement, etc. cannot confirm whether there are no potential risk for worker exposure, even when nanomaterials, etc. are handled using equipment with enclosure measurement, it was determined that RPE should be put on.
- Recent study indicate that, in some filter media used for RPE, a particle diameter of around 50nm results in lowering the collection efficiency of the filter media, and that even N95 (NIOSH standard : collection efficiency of 95% or higher) or RS2 and DS2 (National Certification Test Standard in Japan : collection efficiency of 95% or higher) filter media did fall short of the standard value of 95% in collection efficiency. Therefore, as filter media for dust masks, this document adopts filter media with a collection efficiency of 99.9% or higher.

Meanwhile, these Tables and Figures have been prepared based on currently available information and scientific knowledge. Therefore, the selection criteria for nanomaterials will have to be reviewed at all future stages where we can find any new information on the hazards that nanomaterials, etc. pose, or on how much the collection efficiency changes depending on the particle diameter of filter media used for dust masks.

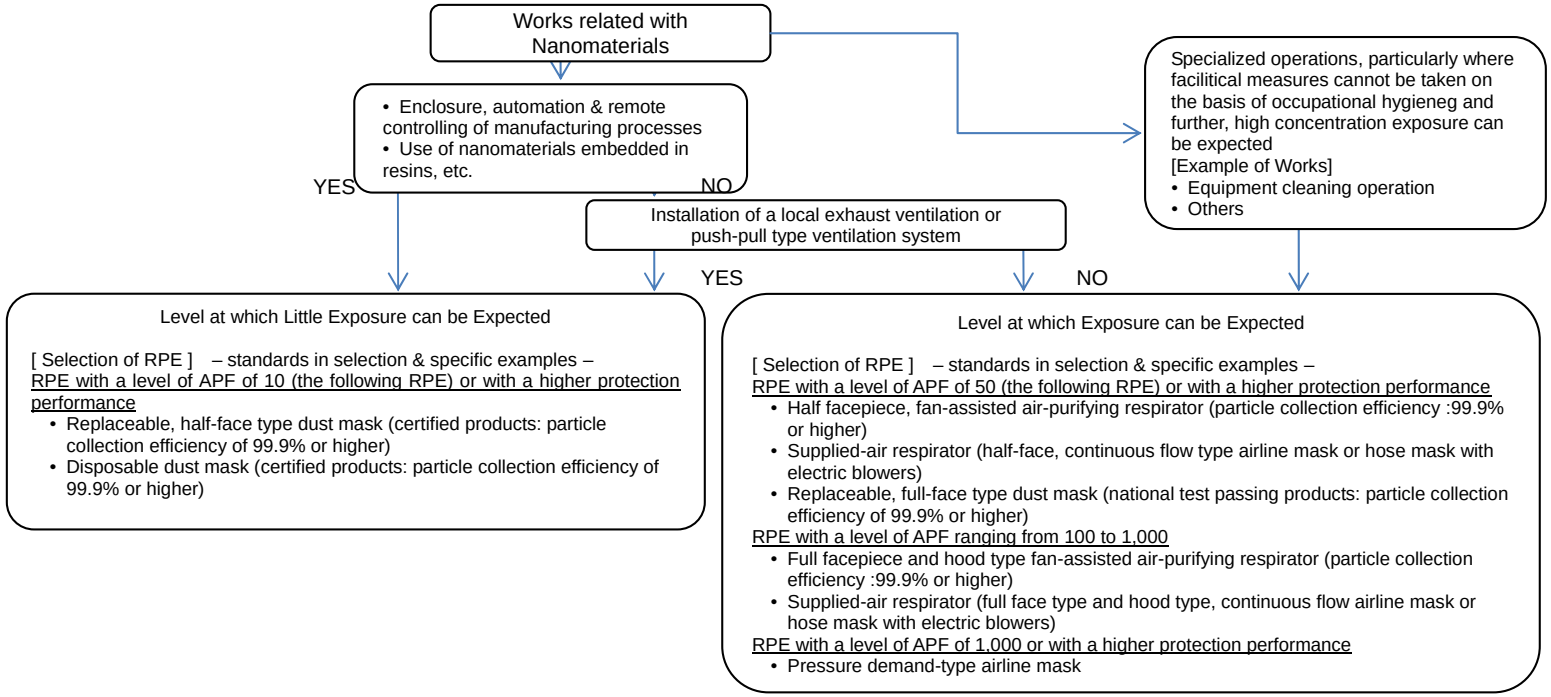
Fig. 1　RPE Selection Chart for
Common Workplaces Manufacturing or Handling Nanomaterials



However, if:

• Oxygen concentration of lower than 18% (works that may suffer from lack of oxygen)	Select supplied air respirators or SCBA (Both dust mask and fan-assisted air-purifying respirator are unsuitable for this case)
• Work under the conditions of coexistence of organic solvents and hazardous gases	Select supplied-air respirators, SCBA, or chemical cartridge respirators with dust proof-filters (particle collection efficiency: 99.9% or higher) (Fan-assisted air-purifying respirators are unsuitable for this case)
• Workplaces that have explosion risks	Select supplied air respirators, SCBA , or dust masks (without motors) (Fan-assisted air-purifying respirators are unsuitable for this case)

Fig. 2　RPE Selection Chart for Testing and Research Institutes



However, if:

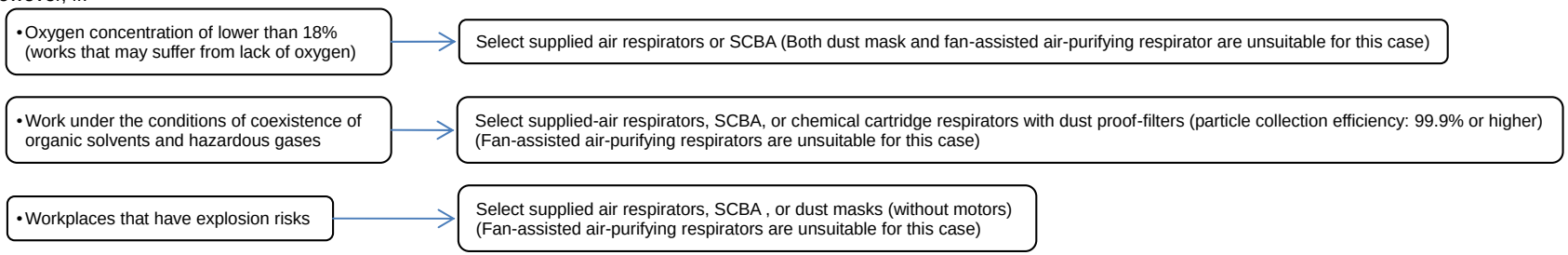


Table 1 : Assigned Protection Factor (APF) for Respiratory Protective Equipment (RPE)

Type of Respirators			APF[a]
Dust Mask (without motors)	Disposable type		3 - 10[b]
	Replaceable type (half face type)		
	Replaceable type (full face type)		4 - 50[b]
Fan-assisted Air-purifying Respirator	Half face type		4 - 50
	Full face type		4 - 100
	Hood type		4 - 25
	Face-shield Type		4 - 25
Supplied-air Respirator	Demand type	Half face type	10
		Full face type	50
	Continuous flow type	Half face type	50
		Full face type	100
		Hood type	25
		Face-shield Type	25
	Pressure demand type	Half face type	50
		Full face type	1000
Pressure demand, combination supplied-air/SCBA full-face respirator			1000
Self-Contained Compressed Air Breathing Apparatus (SCBA)	Demand type	Half face type	10
		Full face type	50
	Pressure demand type	Full face type	5000

a. A minimum level of PF that is expected only when the RPE functions normally

b. Protection factors for APR (such as dust masks and fan-assisted air-purifying respirators) can be calculated from the formula, “100/ (Lm+Lf)”, where [Lm (%)] is the leakage rate of respiratory inlet covering and [Lf (%)] is the permeation rate of the filter of APR

(*) Drawn from Attachment 2 of JIS T 8150, “Guidance for Selection, Use and Maintenance of Respiratory Protective Devices”

Table 2. Selection of Respiratory Protective Equipment (RPE) (Summary)

Place of Use	Enclosure, Unmanning, Automation, Dispersion in Liquid	Installation of a Local Exhaust Ventilation and Push-pull Ventilation System	Without Engineering Measures
Common Workplaces for manufacturing and Handling Nanomaterials	APF of 10 or Higher	APF of 50 or Higher	APF of 100 or Higher
Testing and Research Institutes	APF of 10 or Higher		APF of 50 or Higher

However, If:

Working Environment Conditions	Selection of RPE
Workplaces with Oxygen concentration of lower than 18%	Supplied-air respirators or SCBA (Do not use APRs)
Work under the conditions of coexistence of organic solvents and hazardous gases	Supplied-air respirators, SCBA, or chemical cartridge respirators with dust proof-filters
Workplaces that have explosion risks	Supplied air respirators, SCBA , or dust masks (without motors) (Fan-assisted air-purifying respirators are unsuitable for this case)

(Annex 2)

LSB Notification No.0331012
March 31st, 2009

Attn:
Director of Research Promotion Bureau,
Ministry of Education, Culture, Sports, Science and Technology

Director General of Labour Standards Bureau, MHLW

RE: Notification on Precautionary Measures for Prevention of Exposure etc. to and Other Effects of Nanomaterials

Thank you for your continued understanding and cooperation in the implementation of labour standards administraion.

Though enough is yet to be known about the health effects of nanomaterials which have been actively researched and developed in recent years, some studies reported that certain types of nanomaterials have adverse effects on mice and other rodents under specific conditions.

Therefore, based on the view of precautionary approach, the Ministry of Health, Labour and Welfare (hereinafter referred to as "MHLW") issued a notification No. 0207004 of February 7th, 2008, entitled "Notification on Present Preventive Measures against Exposure at Workplaces Manufacturing and Handling Nanomaterials" and has been working to disseminate it. In order to increase the efficacy of preventive measures against exposure to nanomaterials, it is necessary to provide a more specific management approach which reflects the actual conditions of the working sites. Therefore, the MHLW has held a series of expert panel meetings since March 2008,and the following summary report was released the other day.
(Refer to http://www.mhlw.go.jp/shingi/2008/11/s1126-6.html)

In response to the movement, the MHLW has formulated new measures for preventing exposure, to and other effects to nanomaterials, which is provided in separate attachments of this Notification. The MHLW requests each prefectural government to publicize and implement this Notification throughout the relevant organizations, particularly among workers handling nanomaterials in research and education institutions, including universities and colleges.

Consequently, the Prior Notification (No. 0207003) shall be rescinded.

Just in case you didn't know, related information on nanomaterials is provided on the website of JNIOSH (National Institute of Occupational Study and Health, Japan).

(“separate attachments” is not included here because it is the same as provided for the relevant employee organizations.)