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HEALTH ITEM CHECKLIST FOR REVIEW OF COMPLIANCE
WITH O.S.H.A. STANDARDS AND REQUIREMENTS

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1910.93 AIR CONTAMINANTS

What is necessary to comply with standard?

1. Periodic measurement of potential contaminants in the work room under the supervision of a competent industrial hygienist, wherever any of substances listed in Tables G1, 2 and 3 are in use either on a regular or intermittent basis.
2. Wherever substances listed in Tables G1, 2 and 3 may exceed the standards, appropriate administrative and/or engineering controls recommended by a competent industrial hygienist will be instituted to prevent such occurrences.
3. Whenever substances listed in Tables G1, 2 and 3 exceed the standards, respiratory protection recommended for the specific use by a competent industrial hygienist will be worn by the employees so exposed. Whenever respirators are used, their use shall comply with Paragraph 1913.134 of these standards.

Checklist for Inspection

1. Hazardous Materials List

All substances known to be hazardous or appearing on Tables G1, 2 and 3 that are present in the plant should be listed. If they are a material either purchased for use in the plant or a product or by-product of the plant, the annual amount either procured or produced should be shown. If the substance is a waste product, such as carbon monoxide and the annual amount generated is not able to be calculated, list the in-plant sources of same. This list should be maintained currently.

2. SOP For Measuring Potential Contaminants In The Work Room Air

This should include the methods used, the frequency of measurement, the frequency and means of calibration of analytical equipment, the person responsible for the measurements, the persons performing the measurements. A diagram of the plant showing locations in the plant where potential exposures to substances listed on Tables 1, 2, and 3 are present will be maintained in conjunction with this SOP.

3. Record Of Measurements

This should include date, location, and type of contaminant being measured, name of person performing measurement, the raw data from which the time-weighted average was calculated, and the employee's name and job title and the time-weighted average for the substance being measured.

4. Record Of Industrial Hygiene Recommendations

For every administrative or engineering control of air contaminants in use, as well as the use of respirators by the employees, written evidence will be available concerning the fact that the recommendation was made by a competent industrial hygienist.

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1910.94 VENTILATION

What is necessary to comply with standard?

- 1) Determine all local emission sources of dust and organic vapors.
- 2) Ascertain adequacy of ventilation of these sources to include proper use, capture efficiency, and maintenance as well as adequacy of personal protective and facility safety measures.

Checklist for Inspection

(a) Abrasive Blasting

(2) Dust hazards from abrasive blasting

- (i) Composition, toxicity, and concentration of dust
- (ii) Equipment nozzle grounding and enclosure venting for possible explosive mixtures

(3) Blast Cleaning Enclosure

- (i) Negative pressure, baffled, proper exhaust, safety glass observation window, operable door from both inside and outside.
- (ii) Proper use - turn off blast, exhaust thoroughly, open enclosure.

(4) Exhaust ventilation systems

- (i) Dust leaks, duct blockage, abrasive recirculation fines separator, dust collector.

(5) Personal Protective Equipment

- (i) U. S. Bureau of Mines approved abrasive-blasting respirators for those working in an enclosure and exposed to dusts above TLV.
- (ii) U. S. Bureau of Mines approved particulate respirators for clean-up, dust collector dumping, and sand unloading.
- (iii) U. S. Bureau of Mines approved dust-filter respirators for outdoor abrasive blasting.
- (iv) Leather or canvas gloves, face shields, safety shoes, and aprons.

(6) Air supply and air compressors

- (i) If plant air is used, use a trap and carbon filter in-line, pressure reducing valve or diaphragm, alarm on compressor for undesirable shutdown.

(7) Operational procedures and general safety

- (i) Good housekeeping

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(b) Grinding, polishing, and buffing operations

(2) Application

- (i) Suitable hoods or enclosures which operate continuously whenever operations are carried on.

(3) Hood and branch pipe requirements

- (i) Wheel direction of spin should throw particulate matter to hood, not the operator.
- (ii) Refer to Pages 10507 and 10508 for volume and velocity specifications.

(4) Exhaust Systems

- (i) Suitable dust collectors.

(5) Hood and enclosure design

- (i) Structural strength and stability, proximity of hood to operation.
- (ii) Refer to Pages 10509, 10, 11, and 12 for design details.

(c) Spray Finishing Operations

(3) Design and Construction of Spray Booths

- (i) No combustibles in materials of construction.
- (ii) Unobstructed walkways shall not be less than 6-1/2 feet high and maintained clear of obstruction. In booths where the open front is the only exit, such exits shall be not less than 3 feet wide. In booths having multiple exits, such exits shall not be less than 2 feet wide, provided that the maximum distance from the work location to the exit is 25 feet or less. Where booth exits are provided with doors, such doors shall open outward from the booth.
- (iii) Baffle and overspray filter placement.
- (iv) Wet booths - water enclosure should be 18 gauge metal or heavier, chambers should scrub particulate matter from the exhaust stream, collecting tanks of welded steel construction with weirs, skimmer plates, or screens.

(4) Design and Construction of Spray Rooms

- (i) Non-combustible construction to include fire doors and shutters, proper ventilation

(5) Ventilation

- (i) Fan plenum construction for make-up air, inlet ductwork should be non-combustible with sealed seams and proper support.

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- (ii) Exhaust ductwork shall be No. 24 gauge up to 8", No. 22 gauge for 8" to 18", No. 20 gauge for 18" to 30", and No. 18 gauge for over 30".
- (iii) Exhaust ductwork shall have secure joints, required clean-out doors, sealed from a combustible roof or wall by fire resistant material when passing through the roof or wall, be an independent system.

(6) Velocity and Air Flow Requirements

- (i) Refer to Page 10514 for face velocity requirements.
- (ii) Exhaust air volume which is, at most, 25 percent LEL of solvent with the lowest LEL used in booth.
- (iii) Respirator use if operator must stand downstream of the object being sprayed.

(7) Make-up Air

- (i) Clean and fresh, inlet dampers should be fully open when booth is in use and inlet velocities should not exceed 200 feet per second, filters should be maintained when used.
- (ii) Heat to 65°F when outdoor air is below 55°F or maintain building at 65°F.
- (iii) No means of heating make-up air shall be located in a spray booth, products of combustion should be separated from make-up air and vented unless natural gas with a strong odor is used and [CO] does not exceed 200 ppm in the make-up air.

(d) Open Surface Tanks

(1) General

- (i) Includes washing, electroplating, anodizing, pickling, quenching, dying, dipping, tanning, dressing, bleaching, degreasing, alkaline cleaning, stripping, rinsing, digesting, and similar operations.

(2) Classification of Open-Surface Tank Operations

- (i) Material in the tank should be rated anywhere from A-1 to D-4 inclusive as per guides on Page 10515.

(3) Ventilation

- (i) Maintains concentrations below TLV

(4) Control Requirement

- (i) Tanks ventilated as per requirements on Page 10516.
- (ii) Presence of excess make-up air.

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- (5) Spray Cleaning and Degreasing
 - (i) Adequate capture velocities to control overspray and vapors.
- (6) Control Means Other Than Ventilation
 - (i) If concentrations can be maintained below TLV's, tank covers, foams, beads, chips can be used
- (7) System Design
 - (i) Two or more operations shall not be connected to the same exhaust system where either one or the combination of the substance removed may constitute a fire, explosion, or chemical reaction hazard in the duct system.
- (8) Operation
 - (i) Air flow and maintenance checks at three-month intervals and after prolonged shutdowns.
 - (ii) Make-up air at a rate of 90 to 110 percent of volume exhausted.
- (9) Personal Protection
 - (i) Worker instruction as to hazards and first aid, boots, gloves, goggles, aprons, emergency stand-by respirators, clean cold water supply for burns.
 - (ii) Prohibition of working with sores, burns, open cuts, etc.
- (10) Special Precautions For Cyanides
 - (i) Dikes or other arrangements to prevent the possibility of inter-mixing cyanide and acid in the event of tank rupture.
- (11) Inspection, Maintenance, and Installation
 - (i) Adequate floors to minimize tripping and slipping
 - (ii) Tank cleaning should be preceded by drainage, proper ventilation, appropriate tank atmosphere tests, and an oxygen concentration of at least 19.5 percent. Actual cleaning shall be accompanied by ventilation and adequate oxygen levels.
 - (iii) Maintenance welding where toxic emissions will be encountered should be done only when using proper respirators.
- (12) Vapor degreasing tanks
 - (i) Vapors shall be maintained at a level below the top of the tank which is 1/2 the tank width or at least 36 inches, whichever is shorter.
 - (ii) Sealed heating elements and sludge or cleanout doors for tanks more than 4 square feet in surface area.

1910.95 OCCUPATIONAL NOISE EXPOSURE

What is necessary to comply with Standard?

1. Periodic measurement of potential hazardous noise exposure of employees under the supervision of a competent industrial hygienist.
2. Wherever the noise exposure to an employee exceeds the permissible noise exposures listed in Table G-16, feasible administrative or engineering controls shall be instituted to reduce the noise exposure within the levels in this table.
3. Whenever the noise exposure to an employee exceeds the permissible noise exposures listed in Table 16, a continuing effective hearing conservation program shall be administered.

CHECK LIST FOR INSPECTION

Use Revised PPG Industries Noise Control Program.

1910.97 NONIONIZING RADIATION

What is necessary to comply with standard?

- 1) Determine sources, source strength, possible exposures.

Checklist for Inspection

- (1) For normal environmental conditions and for incident electromagnetic energy of frequencies from 10 MHz to 100 GHz, the radiation protection guide is 10 milliwatt per square centimeter (10 mW/cm²) as averaged over any possible 0.1 hour period.
- (2) Radiation Protection Guide.
- (3) Warning Symbol
 - (i) The warning symbol for radio frequency radiation hazards shall consist of a red isosceles triangle above an inverted black isosceles triangle, separated and outlined by an aluminum color border. The words "Warning-Radio Frequency Radiation Hazard" should appear in the upper triangle.

1910.134 RESPIRATORY PROTECTION

What is necessary to comply with standard?

- 1) Determine if all means of engineering control have been expended.
- 2) Determine if respirators are properly selected, fitted, worn and maintained.

Checklist for Inspection

(a) Permissible Practice

- (1) Maximum engineering controls and substitution of less toxic material.

(b) Requirements for a minimal acceptable program.

- (1) Written SOP's for selection and use of respirators.
- (3) Employee training in proper use and limitations.
- (4) Respirators assigned to individuals when possible.
- (5) Respirators shall be regularly cleaned and disinfected. Those issued for exclusive use of one worker should be cleaned after each day's use or more often if necessary. Those used by more than one worker shall be thoroughly cleaned and disinfected after each use.
- (6) Proper storage - clean and sanitary
- (7) Inspection of respirator parts on a regular basis - monthly inspection of respirators used on an emergency basis.
- (8) Appropriate surveillance of work area conditions and degree of employee exposure or stress shall be maintained.
- (10) Persons should not be assigned to tasks requiring respirators unless local physician has consented.
- (11) Respirators should be U.S. Bureau of Mines approved.

(d) Air Quality

- (1) Compressed oxygen shall not be used in open circuit self-contained breathing apparatus that have previously used compressed air. Oxygen must never be used with air line respirators.
- (2) Breathing air may be supplied to respirators from cylinders or air compressors.
 - (i) A breathing air type compressor should be used to include an uncontaminated air source, inline filters and sorbent beds, compressor failure alarm, high temperature and CO alarm if the compressor is oil-lubricated.
- (3) Air line couples shall be incompatible with outlets for other gas systems.

(e) Use of Respirators

- (1) SOP's should be developed for selection, use and care, as well as emergencies.

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- (2) Each permanently assigned respirator should be marked with assignee's name.
- (3) SOP's for dangerous atmospheres and emergencies
 - (i) When the respirator user could be overcome - one additional man shall be present, communications shall be maintained.
 - (ii) With air line respirators in hazardous atmospheres, safety harness and lines and additional men should be present.
- (5) Check for proper fit; i.e., glasses, beards, hats, dentures, etc. detract from a good fit.

(f) Maintenance and Care of Respirators

- (2) (i) Routine inspections to include tightness of connections and condition of facepiece, headbands, valves, connecting tube, and canisters. Rubber and elastomer parts shall be inspected for pliability and signs of deterioration.
- (ii) Record of inspection dates and findings

(3) Cleaning and Storage

(g) Identification of gas mask canisters

- (1) Proper labels and a color code
- (3) Labels
 - (i) "Canister for (contaminant)" or "Type N Gas Mask Canister"
 - (ii) "For respiratory protection in atmospheres containing not more than ____ percent by volume of (contaminant)."
- (6) Proper canister color - refer to Page 10592.

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1910.141 SANITATION

What is necessary to comply with standard?

Inspect periodically housekeeping, water supply, toilet facilities, washing facilities, change rooms, retiring rooms for women, lunch rooms and food handling against specifications of the standard and establish a compliance program where necessary.

Have available for review the following:

1. Standard specification for drinking fountains, ANSI Z4.2-1942
2. "Food Service, Sanitation Ordinance, and Code" Part V "Food Service Sanitation Manual", U.S. Public Health Service Publication No. 934 (1965)
3. "Vending of Foods and Beverages, A Sanitation Ordinance and Code", U.S. Public Health Service Publication No. 546 (1965)

Checklist for Inspection

1. General Requirements

- a. Housekeeping will be such that all areas of the plant are clean, orderly, and sanitary.
- b. Expectorating shall be controlled to meet the standard.
- c. Waste disposal will be handled as required in the standard.
- d. Rodent, insect and vermin control will be effective in preventing entrance or harborage.

2. Water Supply

- a. Potable water will be available within 200 feet of employees' work location.
- b. Sanitary drinking fountains shall meet above-referenced standards.
- c. Prevention of contamination will be in accordance with standards.
- d. Non-potable water will be posted clearly to indicate it is unsafe and all measures will prevent its passage into a potable water system.

3. Toilet Facilities

Shall be available within 200 feet of employees' work location and in sufficient number and type as specified in standard.

4. Washing Facilities

Shall be convenient and in sufficient number and type as specified in standard.

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5. Change Rooms

Shall be provided whenever it is necessary to change clothes because the work performed involves excessive dirt, heat, fumes, vapor or moisture, or a place for outer garments, shall be furnished.

6. Retiring Rooms For Women

Shall be provided for rest and emergencies in the number specified in the standard.

7. Lunchrooms

Where employees are permitted to lunch on the premises, a lunchroom shall be provided and maintained as specified in standard.

8. Food Handling

All employee food services shall meet the requirements of the above-referenced standard. Where vending machines are operated, they will be in accordance with the above-referenced standard.

1910.151 MEDICAL SERVICES AND FIRST-AID

What is necessary to comply with standard?

1. A physician will be available for advice and consultation on plant health matters.
2. In the absence of a treatment facility in near proximity to the workplace used for the treatment of all injured employees, a person trained to render first-aid will be available, as will first-aid supplies approved by the consulting physician.
3. Quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use when there is a potential exposure to injurious corrosive materials.

Checklist for Inspection

1. The plant physician must be familiar with the operation of the plant and be available to plant management and employees for advice and consultation on plant-related health matters.
2. The plant physician will provide written instructions for the nurses or first-aid attendant on the first-aid measures that will be performed by them in the plant, including the use of first-aid supplies and equipment, medications, etc. These instructions will also include instructions on appropriate disposition of both occupational and non-occupational injuries or illness. He will provide sufficient surveillance of in-plant first-aid provided to assure that it is in accordance with his instructions.
3. Written evidence of adequate current first-aid training for employees providing first-aid in the plant.
4. In all areas where corrosive liquids are present will be provided with an appropriate emergency quick-flushing water outlet.

1910.252 WELDING, CUTTING, AND BRAZING
PARAGRAPH (f) HEALTH HAZARDS AND VENTILATION

What is necessary to comply with standard?

Inspect periodically all areas where welding, cutting and brazing are performed against the specifications of the standard and establish a compliance program where necessary.

Have available for review the following:

1. ANSI Z49.1-1967 Safety in Welding and Cutting published by the American Welding Society.
2. Information Circular 8436, Respiratory Protective Devices approved by the Bureau of Mines as of December 31, 1968, as updated to present.

Checklist for Inspection

1. Screens

Will be provided on all sides without restricting ventilation usually about 2 feet above floor

2. Maximum Allowable Concentrations

Keep toxic air contaminants below those levels set in 1910.93.

3. Precautionary Labeling

Filler materials and fluxes will be labeled in accordance with the standard.

4. Ventilation and Respirators

Ventilation and/or respirators as specified in the standard for welding or cutting on specific metals and/or in specific types of confined spaces will be provided.

5. Local Exhaust Hoods and Booths

At least 100 linear feet per minute will be maintained away from the welder.

6. Degreasing with Chlorinated Hydrocarbons

No degreasing vapors will be permitted in air surrounding any welding operation. In addition, trichloroethylene and perchlorethylene shall be kept out of air penetrated by the ultraviolet radiation of gas-shielded welding operations.

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SUMMARY OF DATA ON EMPLOYEES EXPERIENCING
MERCURY IN URINE LEVELS ABOVE 300 MICROGRAMS
PER LITER

EMPLOYEE CLOCK NUMBER	MERCURY IN URINE LEVELS	DATES OBTAINED	REMOVED FROM MERCURY EXPOSURE	POSITIVE MEDICAL FINDINGS ASSOCIATED WITH MERCURY EXPOSURE
#73	180 525, 512, 588, 354 105	6/1/70 10/12/70	YES	NO
#58	122 320, 388, 407, 252, 252, 224, 202, 250, 240 160	5/27/71 10/29/71	NO	NO
#82	112 379, 362, 216 260	6/15/70 8/31/70	NO	NO
#48	106 466, 333, 271 199	5/70 2/12/71	NO	NO
#40	114 294, 290, 310, 270 32	3/9/70 11/19/70	YES	NO

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MERCURY CELL
EMPLOYEE URINE ANALYSES

NAME _____

BADGE NO. _____

[illegible]

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MERCURY PHYSICAL RECORD

NAME: _____

Date:							
Job:							
Weight:							
Appearance							
GI Symptoms							
Gums							
Salivation							
Tremor:	Eyes						
	Hands						
	Tongue						
Gait							
Finger to Nose:	Right						
	Left						
Eye Changes							
Psychic							
Reflexes:	Upper						
	Lower						
Romberg							
Signature							

Remarks: _____

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