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Document Contact	Amy Blazejewski: Dir, Env & Life Safety
Area	EOC-Hazardous Materials and Waste
Applicability	Beaumont All Sites

Formaldehyde

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Document Type: Policy

I. PURPOSE AND OBJECTIVE:

Beaumont Health aims to ensure that no employee is exposed to an airborne concentration of formaldehyde which exceeds 0.5 Parts Per Million (ppm).

II. POLICY STATEMENT:

Beaumont Health is committed to providing a safe and healthy workplace for all employees using or exposed to hazardous gases and vapors such as formaldehyde (formalin). Formaldehyde will be monitored, controlled, and there will be appropriate preparations for spills.

III. DEFINITIONS:

A. **Acute**: eye and respiratory irritation can result from exposure to the liquid and vapor forms. Severe abdominal pains, nausea, vomiting and possible loss of consciousness could occur if ingested in large amounts.

B. **Chronic:** high concentration of vapor inhaled for long periods can cause laryngitis, bronchitis, or bronchial pneumonia.

C. **Action Level:** action level means a concentration of 0.5 part formaldehyde per million parts of air (0.5 ppm) calculated as an eight (8)-hour time-weighted average (TWA) concentration. The action level should not be exceeded and the use of personal protection and other responses to reduce the level must be implemented.

    1. The action level (AL) is 0.5 parts per million (ppm) and the permissible exposure limit (PEL) is 0.75 ppm. Both of these exposure limits are based on an employee's

time weighted average (TWA) exposure for an eight hour workday. There is also a 15-minute short term exposure limit (STEL) exposure of 2 ppm.

D. **Formaldehyde:** formaldehyde is a colorless gas with a very strong odor and is highly flammable. Formaldehyde or solutions of formaldehyde (called formalin) may be used as a bactericide, a fungicide, and a human tissue preservative. Formaldehyde is a gas, which is very easily absorbed into water and is used as formalin, a water mixture of water and formaldehyde. It is available as 37%, but normally used in much lower concentrations, such as 10%, 5% and lower.

E. **SDS** - Safety Data Sheet

IV. PROCEDURE:

A. Workplace Atmosphere: Levels of formaldehyde in the air of the work area should be monitored by appropriate monitoring tools, including passive monitors and electronic meters. Refer to the Beaumont Monitoring Hazardous Gases and Vapors policy.

B. Perform periodic air monitoring, at least every 6 months, when initial monitoring shows employee exposure at or above the action level, and at least once a year if results indicate exposures are above the STEL.

C. Establish a regulated area when the exposure is above the PEL or the STEL. Post signs (examples below) in the regulated area, and limit access only to authorized personnel (people who have to work or be present in the area). No food, cosmetics, gum, smoking, or drinking is allowed in a regulated area.

D. Institute all feasible engineering or work practice controls to reduce employee exposure below the PEL. This can include local exhaust ventilation, job rotation, or other work practices.

E. Respiratory Protection may be required whenever the PELs are exceeded and feasible controls cannot reduce exposures below the PELs. All Respiratory Protection must meet the Beaumont Respiratory Protection Policy.

F. Personal protective clothing or equipment (such as goggles/face shields, gloves, protective clothing) must be used if there is potential for skin or eye contact with liquids.

G. Ensure that contaminated clothing and equipment is removed at the workplace, properly stored, cleaned and replaced. Contaminated clothing and equipment must be labeled. Employees cannot take such contaminated items from the workplace.

H. The requirement and need for emergency eyewash and/or showers will be evaluated and installed based on risk assessments per the Beaumont Eyewash Stations and Shower Equipment policy.

I. Medical Surveillance may be required based on monitoring results. Department leadership, Corporate Safety, and Employee Health will determine.

J. Records of all monitoring will be kept on file in the department. Monitoring records may need to be reviewed and sent to Employee Health and Corporate Safety for any exposure concerns.

K. If the action levels are not exceeded, refer to the Beaumont Health Monitoring Hazardous Gases and Vapors. To ensure no changes have occurred in ventilation, controls, work practices/equipment, work flow amounts or patterns, work area, etc., and to assure that

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conditions have not changed in a manner that raises the levels - in general, these employees exposed to formaldehyde will be monitored at a minimum of every three years.

L. Areas where formalin is used and handled should have a sign to warn people in the area, which says:

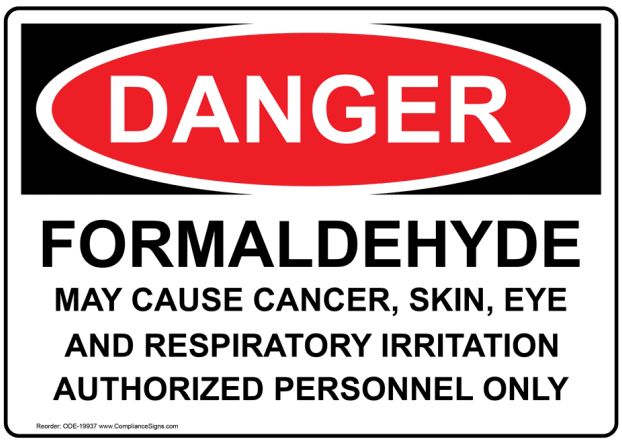

Image: Formaldehyde Sign, Grainger, 2022

M. **Small Spill**

1. For small containers, place the leaking container in a well ventilated area or place in a sealed container to contain the spill and vapors. Wipe up small spills with neutralizing absorbent material (i.e. Fan Pad-GL Formalin Neutralizing Pads). When used, the Formalin is neutralized to a non-hazardous material, and the pads can be safely thrown in regular trash. Alternatively, neutralizing spill agent may be used (i.e. Amphomag, Polyform F) specific to Formalin spills and should be applied right away to minimize vapors. Instructions specific to that spill agent should be followed. In general, neutralized Formalin spill waste can go in regular trash, however for large amounts of spill waste material or if unsure, contact site Environmental Services or Corporate Safety for proper waste handling and disposal. The waste may still be

considered hazardous and may need to be managed through approved Hazardous Waste Hauler.

N. **For larger spills**, refer to the department's spill response protocols and to the Beaumont Hazardous Material Spill Response Plan.

1. Employees may need to evacuate the area immediately
2. Or if safe to do so and employee is trained, neutralize the spill with spill response agents specific to Formaldehyde/Formalin (i.e. Amphomag, Aldex, Polyform F, or Spill-X-FP powder). Instructions specific to that spill agent should be followed.
3. All doors and windows to the area involved should be closed. As practical, control ventilation; go to exhaust only, or shut down all ventilation that may spread it to other rooms.
4. Specific spill response will be dependent on the department spill response plan, employee training and expertise, size of spill, and location.
5. Following a spill and after neutralization and removal of all spill clean up materials, the area should be cleaned using hospital approved disinfectants.
6. Spill waste material that has not been neutralized must be stored as hazardous waste to be removed by approved Hazardous Waste Hauler.
7. Formaldehyde/Formalin spills of significance should be reported in RL Solutions under Hazardous Chemical Spill per the Beaumont Health Hazardous Material Spill Response Plan.
8. Any employee injuries, illnesses, or exposures related to Formaldehyde/Formalin, should be reported in the employee First Report of Injury Form.
9. Any employee exposed to formaldehyde in an emergency or cleanup that develops symptoms of overexposure must be seen by a health professional as soon as possible. Symptoms of overexposure are evidence of eye, nose, or throat irritation; hypersensitivity; allergic conditions, skin reaction; and upper or lower respiratory problems. A SDS should be provided to the physician or employee health.

O. Monitoring and Monitoring Equipment

1. See Beaumont Health Policy on Monitoring Hazardous Gases and Vapors

P. Initial monitoring: all employees who may be exposed at or above the action level or at or above the STEL to accurately determine the exposure of each employee working with and exposed to formaldehyde. A representative sampling strategy within each job classification for each work-shift is acceptable to measure exposures. The initial monitoring process should be repeated each time there is a change in production, equipment, process, personnel, or control measures which may result in new or additional exposure to formaldehyde. Reports of signs or symptoms of formaldehyde exposure may lead to additional monitoring.

Q. Periodic monitoring: periodically measure and accurately determine exposure to formaldehyde for employees shown by the initial monitoring to be exposed at or above the action level or at or above the STEL. Monitoring results that reveal employee exposure at or above the action level, repeat monitoring should occur at least every 6 months. Monitoring results at or above the STEL, repeat monitoring should occur at least once a year.

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R. Termination of monitoring: periodic monitoring may discontinue if results from two consecutive sampling periods taken at least 7 days apart show that employee exposure is below the action level and the STEL based on representative samples.

S. Employee notification of monitoring results: employee must be notified within 15 working days after the receipt of the results of any monitoring performed, notify each affected employee of these results either individually in writing or by posting the results in an appropriate location that is accessible to employees. If employee exposure is above the PEL, affected employees should be provided with a description of the corrective actions being taken by the employer to decrease exposure.

T. Monitoring Techniques: MIOSHA/OSHA's only requirement for selecting a method for sampling and analysis is that the methods used accurately evaluate the concentration of formaldehyde in employees' breathing zones. Sampling and analysis may be performed by collection of formaldehyde on liquid or solid sorbents with subsequent chemical analysis. Sampling and analysis may also be performed by passive diffusion monitors and short-term exposure may be measured by instruments such as real-time continuous monitoring systems and portable direct reading instruments.

U. Corporate Safety can assist with monitoring protocols and frequency

V. Education and Training

1. All Beaumont Health staff working with Formalin or Formaldehyde will receive department specific training (which may also include 2017r and 2016r Formaldehyde Training lab in Healthstream). Employees also complete Hazard Communication training annually through Healthstream.
2. Training should be provided at the time of initial assignment, and whenever there is a potential for a new exposure to formaldehyde in the work area. The training shall be repeated at least annually.

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V. REFERENCES:

A. Michigan Department of Licensing and Regulatory Affairs, Occupational Health Standards, Part 306 Formaldehyde. http://www.michigan.gov/documents/CIS_WSH_part306_37835_7.pdf

Attachments

Formaldehyde Sign

MIOSHA Part 306 Formaldehyde

Approval Signatures

Step Description	Approver	Date

VP Support Services	John Fragomeni: SVP, Facilities BHSH	10/21/2022
Policy and Forms Steering Committee Approval (if needed)	Amy Blazejewski: Dir, Env & Life Safety	10/21/2022
Policy and Forms Steering Committee Approval (if needed)	Gail Juleff: Project Mgr Policy	10/21/2022
	Timothy Poszywak: Mgr, Construction Compliance	10/21/2022
	Amy Blazejewski: Dir, Env & Life Safety	10/21/2022
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