



Stony Brook University Hospital  
Environmental Health & Safety  
Policy & Procedure Manual



Title: **Monitoring for Hazardous Air Contaminants**

Number	EH&S – 4-8	Revision:	7/22/08	Date	1/80	Pages	8
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**PURPOSE:** To minimize air contaminants exposure to employees by providing for proper monitoring of air contaminants. Contaminants monitored include, but are not limited to, waste anesthesia gases, formaldehyde, glutaraldehyde, methyl methacrylate, xylene, and ethylene oxide.

**SCOPE:** Hospital wide.

## PROCEDURES:

### I. General

- A. Air contaminants will be measured by badges, or other equipment as appropriate, on a periodic basis in work areas identified as using the air contaminants. Monitoring will normally be completed as per the attached schedule in Appendix A and when a significant change in equipment, process, personnel or control measures indicates a retest is appropriate.
- B. Monitoring is performed by Environmental Health & Safety (EH&S). Where badges are used, they will work with the affected staff and supervisors to arrange for the monitoring. Where other monitoring equipment is used, EH&S will operate the equipment, or facilitate the monitoring.
- C. Monitoring will be conducted using protocols established by NIOSH, OSHA or other recognized sources. Laboratory analysis will be conducted by an AIHA accredited industrial hygiene laboratory. Laboratory results will be received by EH&S, and summary reports will be forwarded to the affected departments. Where monitoring indicates an airborne concentration above a regulatory exposure limit, immediate action will be recommended by EH&S, and implemented by the appropriate department, and the results of the activity reported to the EC Committee, along with further monitoring to verify the effectiveness of the changes.

### II. Contaminant Specific Monitoring Procedures

- A. **Waste Anesthetic Gases** - Preventative maintenance is performed routinely on the anesthesia equipment by Biomedical Engineering or an outside contractor. Dosimeters, and/or a contractor using infrared spectrometry, or equivalent equipment will measure waste anesthesia gases in areas using anesthesia (e.g., OR, ASC, Labor & Delivery, Endoscopy and MRI) every three years.

1. Dosimeter badges are worn by the staff based on risk assessment. During surgical procedures, typically anesthesiology staff and a nurse will be monitored.
2. Documentation of the dosimeters, times, and dates is the responsibility of the supervisor or designee.
3. Exposures above 25 ppm nitrous oxide as an 8 hour time weighted average and above 2 ppm for any halogenated waste anesthetic gases (15 minute sample) will be reported to the EC Committee and Biomedical Engineering, and the area and equipment evaluated for leakage.

#### **B. Air Contaminants in Patient Care, Laboratories and Service Areas**

Monitoring typically includes sampling for ethylene oxide, ethyl chloride, formaldehyde, glutaraldehyde, lead/cadmium, methyl methacrylate, and xylene. Other contaminants will be included as necessary.

1. Air contaminants in the laboratory or other service areas will be tested as per the schedule in Appendix A.
2. Air monitoring will typically be performed using passive dosimeters, such as charcoal cartridges, or chemical dosimeters.
3. Dosimeter badges are obtained from a commercial source (e.g., Assay Technology) for the specific contaminant to be measured.
4. Dosimeters will be used as per the supplier's instructions. Accurate documentation of the times opened and closed, and total time in use is necessary for accurate results.
5. Airborne concentrations over established occupational exposure limits may trigger changes in the equipment or ventilation, additional monitoring, and possible medical monitoring of exposed staff.

#### **C. Ethylene Oxide**

Central Sterile Supply staff will be monitored annually for ethylene oxide (EtO), following the above procedures.

### **III. Responsibilities:**

#### **A. Environmental Health & Safety**

1. Coordinate occupational exposure monitoring for the affected departments, and provide exposure monitoring equipment with instructions. Distribute *Request for Exposure Monitoring* form (Appendix B) to identified units for completion by the Supervisor.

2. Provide laboratory reports to the Supervisor to share with the monitored staff, within 15 business days of report receipt.
3. Prepare and submit a formal report with exposure results, and any corrective actions and recommendations to the Supervisor and to Employee Health Services for the employee's file.
4. Where monitoring indicates an airborne concentration above a regulatory exposure limit, immediate action will be recommended by EH&S, and implemented by the appropriate department, and the results of the activity reported to the EC Committee, along with further monitoring to verify the effectiveness of the changes.

**B. Department Supervisors**

1. When provided by EH&S, return the completed *Request for Exposure Monitoring* form to EH&S.
2. Ensure that employees assigned to wear the exposure monitoring equipment conduct the monitoring in a timely fashion. Unused monitoring badges typically require refrigeration and must be used by their expiration date.
3. Comply with corrective actions and recommendations provided in the summary report.
4. Provide copies of laboratory reports to the affected employees. Return original laboratory report with monitored employees initials and date to EH&S, within 10 business days after receiving the report.

**C. Affected Employees**

Wear exposure monitoring equipment as instructed. Contact Supervisor or EH&S at 4-6783 with any questions regarding proper monitoring procedures.

**INQUIRIES/REQUESTS:**

Environmental Health and Safety  
L1-059 HSC  
Zip 8017  
Main Office: 444-6783  
Fax: 444-6845

**RELATED FORMS:**

Occupational Chemical Exposure Monitoring (Appendix A)  
Request for Exposure Monitoring (Appendix B)

**RELATED DOCUMENTS:**

OSHA 29 CFR 1910  
ACGIH Threshold Limits Values and Biological Indices  
(TLVs and BEIs)  
ACGIH Guide to Occupational Exposure Values

## Appendix A Occupational Exposure Monitoring

	HA 1-3	EA 1-3	Monitoring Frequency	Location	Contact	Phone
<b>Formaldehyde</b>						
Pathology (Grossing, Histology, Cytology Prep Lab, Autopsy)	3	3	annual	UH-2-665, 666, 714, 735	Kathy DaSilva	4-8249
Microbiology-Parasitology	3	3	annual	UH-3-722	Dennis Sheppard	4-2609
Special Hematology	3	2	every 2 yrs	UH-3-654	Christine Munz	4-2607
Operating Room	3	2	every 2 yrs	UH, L4	Kathy Scheriff	4-7483
Ambulatory Surgery Center (ASC)	3	2	every 2 yrs	E. Loop Road	Tom Halton	4-9400
Immunology - Flow Cytometry	2	1	every 3 yrs	UH-3-705/725	Ken O'Sullivan	4-2373
Endoscopy	3	1	every 3 yrs	UH, 14N	Jane Collins	4-1768
Carol Baldwin Breast Ctr.	3	1	every 3 yrs	ACP	Trisha Fidelli	4-4634
Primary Care Center	3	1	every 3 yrs	Patchogue	Kathy Lenahan	4-6300
Primary Care Center, Pediatrics	3	1	every 3 yrs	East Moriches	Marion Pendleton	878-8060
Primary Care Center, ObGyn	3	1	every 3 yrs	East Moriches	Marion Pendleton	878-8060
Surgical Care Center	3	1	every 3 yrs	37 Research Way	Leticia Gotay	4-4545
ENT	3	1	every 3 yrs	37 Research Way	Leticia Gotay	4-4545
Dermatology	3	1	every 3 yrs	181 Belle Meade	Lynne Laucella	4-4272
Elsie Owens Health Center	3	1	every 3 yrs	Coram	Elaine Leffert	854-2252
Urology	3	1	every 3 yrs	24 Research Way	Mary Hoch Anne Klassert	4-1916; 4-1910
OB/Infertility Clinic	3	1	every 3 yrs	6 Tech Drive	Ellen Sotomayer	4-4686
Plastic Surgery	3	1	every 3 yrs	24 Research Way	Leslie Jahn	4-4282
Primary Care	3	1	every 3 yrs	Islip Terrace	Joan Kolleger	581-9330
Family Medicine	3	1	every 3 yrs	181 Belle Meade	Cynthia Tooker	4-5790
<b>Ethylene Oxide</b>						

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Central Sterile Supply	3	3	annual	UH, L3	Ron Cordero	4-2386
Physical Plant - HVAC	3	1	every 3 yrs	CSS	Scott Dow	4-2388
<b>Lead/Cadmium</b>						
Radiation Oncology	3	1	every 3 yrs	UH, L2	Kevin Seely	4-2211
<b>Xylene</b>						
Microbiology-Parasitology	2	1	every 3 yrs	UH-3-722	Dennis Sheppard	4-2609
Pathology- Grossing Lab, Histology, Special Histology, Cytology Prep Lab, Electron Microscopy	2	1	every 3 yrs	UH-2-665,666, 667, 714	Kathy DaSilva	4-8249
Cytogenetics/Molecular Genetics	2	1	every 3 yrs	UH-3-524, 2-713	Terry Mercado	4-2749
<b>Methyl Methacrylate</b>						
Operating Room	2	3	every 2 yrs	UH, L4	Kathy Scheriff	4-7483
<b>Waste Anesthetic Gases</b>						
Operating Room/PACU	3	1	every 3 yrs	UH, L4	Kathy Scheriff	4-7483
OR Ambulatory Surgery Ctr.	3	1	every 3 yrs	ASC	Tom Halton	4-9400
Labor & Delivery	3	1	every 3 yrs	UH, 8N	Susan Little	4-2155
Endoscopy	3	1	every 3 yrs	UH-14N-013	Jane Collins	4-8039
Radiology - MRI	3	1	every 3 yrs	UH, L4	Tony Indelicato	4-7827
BME	3	1	every 3 yrs	HSC, L1	Charlie Bebbber	4-1449
<b>Glutaraldehyde (Ultizyme)</b>						
Endoscopy	2	3	every 2 yrs	UH-14N-013	Jane Collins	4-8039
Labor & Delivery	2	1	every 3 yrs	UH, 8N	Susan Little	4-2155
ED Acute	2	1	every 3 yrs	UH 4-248A Soiled Utility Room	Pat DiBella	4-9314
Emergency Department	2	1	every 3 yrs	UH, L4	Pat DiBella	4-9314
OR (2)	2	1	every 3 yrs	UH, L4, substerile 1 & 2 and soiled utility room 4-625	Kathy Scheriff	4-2924

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Radiology, Ultrasound	2	1	Cidex OPA	UH, L4	Lydia Johnson / Chris Gottesman	4-2415
Immunology - Flow Cytometry	2	1	every 3 yrs	UH-3-700	Corinne Leombruno	4-8078
Histology	2	1	every 3 yrs	UH-2-666	Camille Kutcher	4-2298
Electron Microscopy	2	1	every 3 yrs	UH-2-708	Kathy DaSilva	4-8249
Biomedical Engineering	2	1	every 3 yrs	HSC, L1	Jim Connolly	4-1420
Ambulatory Surgery Center	2	1	Cidex OPA	ASC CSS	Tom Halton	4-9400
ACP Surgical Oncology (2)	2	1	every 3 yrs	ACP	Carol Amadeo	8-0901
ACP Imaging	2	1	every 3 yrs	ACP	Charlie Mazzaresse	4-9347
Urology	2	1	every 3 yrs	24 Research Way	Mary Hoch Anne Klassert	4-1916 4-1910
Otolaryngology ENT Clinic(2)	2	1	every 3 yrs	37 Research Way	Lori Gynizio	44183
OB/Infertility Clinic (3)	2	1	Cidex OPA	6 Tech Drive	Ellen Sotomayer	4-4686
Pediatrics	2	1	Cidex OPA	Islip Terrace	Joan Kollegher	581-9330
Life Care Center	2	1	Cidex OPA	Hampton Bays	Linda DeRosa	723-5000

**Legend:**

**Hazard Assessment (HA):** 1 = low chemical hazard, 2 = moderate chemical hazard (sensitizer), 3 = high chemical hazard (carcinogen)

**Exposure Assessment (EA):** 1 = low potential for exposure (eg. specimen jars, used in fume hood, routine equipment maintenance), 2 = moderate potential for exposure, 3 = high potential for exposure (eg., pouring, minimal controls)

**Monitoring Frequency (HA x EA):** score of 9+ = annual, score of 6-8 = every two years, <6 = every 3 years



## Request for Exposure Monitoring

*Instructions:* Complete this form and return to: EH&S, Healthcare Safety, UH Exposure Monitoring, z=8017 or Fax to (631) 444-6845, Attn: UH Exposure Monitoring. If you have any questions contact EH&S at (631) 444-6783

<b>Date form completed:</b>	
<b>Chemical or Physical Hazard to be Monitored (use a separate form for each hazard):</b>	
<input type="checkbox"/> Ethylene Oxide <input type="checkbox"/> Formaldehyde (product used _____) <input type="checkbox"/> Glutaraldehyde (product used _____) <input type="checkbox"/> Mercury <input type="checkbox"/> Metals _____ <input type="checkbox"/> Methylene Chloride	<input type="checkbox"/> Methyl methacrylate <input type="checkbox"/> Nitrous Oxide <input type="checkbox"/> Waste Anesthetic Gases (products used _____) <input type="checkbox"/> Xylene <input type="checkbox"/> Noise <input type="checkbox"/> Other _____
<b>Department and Address:</b>	
<b>Location(s) of Monitoring/Room #s:</b>	
<b>Contact Name:</b>	
<b>Contact Phone:</b>	
<b>Contact Address/Zip:</b>	
<b>List all Work Shifts:</b>	

**Describe all procedures (tasks) involving the above hazard:**

Description of Each Task (attached additional sheet, if necessary)	Job Titles Performing Task	Duration of Task	Frequency of Task

<b>Has this area been monitored previously and, if so, when:</b>
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List a representative number of employees from each shift to be monitored. If possible, one employee in each job title should be monitored:

NAME	JOB TITLE	Employee ID#	SHIFT

*Continued on next page*

