



Respiratory Hazard Assessment

Client Augsburg University

Date September 30, 2024

IEA Assessor Aly Rockwell

IEA conducted a preliminary assessment for respiratory hazards at Augsburg University. This assessment is utilized to document any known tasks in the University that may expose employees to respiratory hazards.

ART DEPARTMENT – CERAMICS AND SCULPTURE FACULTY

Silica

Comments & Recommendations

Employees in the Art Department – Ceramics and Sculpture (faculty and student workers) currently wear a half mask respirator for different tasks involving airborne silica dust (mixing glazes, cleaning, etc.). The faculty and student workers use an organic vapor and acid gas cartridge with cloth dust and mist filters that are not NIOSH approved for silica and respirable dust. NIOSH approved filters for silica and respirable dust will be magenta or have a magenta band on the cartridge. The frequency and duration at which they wear the half-mask respirator varies depending on the task and the semester.

There is local ventilation available for various tasks involving ceramics, sculpture, and welding.

IEA recommends exposure monitoring during different tasks to ensure the airborne concentration of silica and respirable dust does not exceed the OSHA PEL for all employees in the Art Department – Ceramics and Sculpture (faculty and student workers). In addition, it is recommended that faculty and student workers do supplied with cartridges that are NIOSH approved for silica and respirable dust.

Respiratory Hazard Assessment

<u>Welding</u>	
Amount of time spent per day welding/cutting/brazing	Less than 15 minutes
Location where welding may take place and ventilation utilized	Indoors – Local Ventilation
Thickness of material being utilized	Unknown
Type of metal being utilized	Unknown
Type of hot work	Unknown
Comments & Recommendations	<p>There is local ventilation available for various tasks involving ceramics, sculpture, and welding.</p> <p>IEA recommends exposure monitoring if the metals used have a short-term exposure limit value and/or if the job task duration is increased.</p>

<u>Respirator Users</u>	
Required Users	There are currently required respirator users in the Art Department – Ceramics and Sculpture Faculty.
Voluntary Users	There are voluntary respiratory users within the Art Department – Ceramics and Sculpture (Student Workers). The faculty member allows students to use their respirator as needed for different tasks involving silica exposure in the Art Department. The faculty member shows the students where the respirator is stored, how to use it, and how to properly clean the respirator. IEA recommends that Augsburg University has Appendix D forms on file. In addition, IEA recommends the voluntary half-mask users undergo a respirator medical evaluation prior to wearing the half-mask respirator.

Respiratory Hazard Assessment

ART DEPARTMENT – PAINTING AND DRAWING FACULTY

Chemical Usage Review

Safety Data Sheet Compilation Review	Some chemicals indicate that respiratory protection is required if inadequate ventilation or exposure limits are exceeded.
Chemicals that may require respiratory protection:	Krylon Workable Fixatif Spray Coating (used twice/semester for 10 minutes by faculty member, only used with local ventilation in the Ceramics/Sculpture studio. Employee voluntarily uses an N95 respirator when performing this task.)

Respirator Users

Required Users	There are currently no required respirator users in the Art Department – Painting and Drawing Faculty.
Voluntary Users	There are currently voluntary N95 respiratory users within the Art Department – Painting and Drawing Faculty. IEA recommends Augsburg University have Appendix D forms on file. IEA recommends considering offering a P95 to filter VOCs.

Respiratory Hazard Assessment

BIOLOGY DEPARTMENT – LABORATORY MANAGER

Working with Airborne Silica-Containing Minerals (Perlite and Vermiculite)

Comments & Recommendations	<p>Employees in the Biology Department purchase bulk perlite and vermiculite and utilize this for various tasks, including potting plants, working with root cuttings, and preparing potting material (from bulk). The biology Laboratory Manager uses an N95 mask when working with perlite and vermiculite. Employees perform tasks involving perlite and vermiculite in semi-attached greenhouse space and potting shed of Hagfors Building. There is no local ventilation in the area where perlite and vermiculite are used.</p> <p>Employees work with perlite and vermiculite one/week, for about 15 minutes/above-mentioned tasks. No SDS available.</p> <p>PELs for this product are unlikely to be exceeded during the 15-minute usage. IEA recommends exposure monitoring if task duration is increased.</p>
---------------------------------------	---

Working with Acephate

Comments & Recommendations	The Biology Department – Laboratory Manager works with Acephate (granular, pellet-form) once/week for 15 minutes. No SDS available.
---------------------------------------	---

Working with Chemicals or Vapors

Comments & Recommendations	All chemical handling involving vapors or hazardous fumes are conducted in departmental fume hoods (Hagfors Building). Fume Hoods are inspected annually. No respirators are used.
---------------------------------------	--

Respirator Users

Required Users	There are currently no required respirator users in the Biology Department.
Voluntary Users	There are currently voluntary N95 respiratory users within the Biology Department (Laboratory Manager). IEA recommends Augsburg University have Appendix D forms on file.

Respiratory Hazard Assessment

CHEMISTRY DEPARTMENT – FACULTY AND LABORATORY MANAGER

Working with Chemicals or Vapors

Comments & Recommendations	All chemical handling involving vapors or hazardous fumes are conducted in departmental fume hoods (Hagfors Building). Fume Hoods are inspected annually. No respirators are used.
---------------------------------------	--

Respirator Users

Required Users	There are currently no required respirator users within the Chemistry Department.
Voluntary Users	There are currently no voluntary respiratory users within the Chemistry Department.

Respiratory Hazard Assessment

FACILITIES DEPARTMENT – BUILDING OPERATOR & GENERAL MAINTENANCE

Chemical Usage Review

<p>Safety Data Sheet Compilation Review</p> <p>Chemicals that may require respiratory protection:</p>	<p>Some chemicals indicate that respiratory protection is required if inadequate ventilation or exposure limits are exceeded.</p> <p>E-100 Emerge Nu-Brite Coil Cleaner STRUST + SSPR Gloss – Rust-Oleum Aerosol Spray Paint Formula 305 Formula 314-T Formula 315 Formula 2530LT Formula 2720 Formula 6410 R-22 R-134a R-401A Thrift Drain Cleaner</p>
Comments & Recommendations	<p>IEA recommends reviewing the areas where the chemicals are used to ensure it is adequately ventilated, conducting exposure monitoring to ensure levels are below exposure limits as indicated on the chemicals' SDSs, or substituting these products with ones that do not have exposure limits.</p>

Gypsum Board Sanding, Patch, and Repair

Comments & Recommendations	<p>Building Operator & General Maintenance employees at Augsburg University are responsible for gypsum board sanding, patch and repair. Employees perform this task once/week for about 3 hours (over an 8-hour shift). An SDS for the most frequently purchased brand of gypsum board is available (ToughRock Mold-Guard Gypsum Board).</p> <p>When possible, employees will open the window of the room where gypsum board sanding, patch, and repair work is being conducted (especially in summer months when the work intensifies).</p> <p>IEA recommends exposure monitoring during this task to ensure the airborne concentration of silica and respirable dust does not exceed the OSHA PEL for Building Operators & General Maintenance Employees in the Facilities Department.</p>
---------------------------------------	--

Respiratory Hazard Assessment

Spray Painting

Comments & Recommendations	<p>Building Operator & General Maintenance employees at Augsburg University are responsible for spray painting vents. Employees perform this task once/month for about 15 minutes. Employees perform this task indoors with normal HVAC ventilation. An SDS for the most frequently purchased brand of spray paint is available.</p> <p>IEA recommends exposure monitoring for various volatile organic compounds if the task duration is increased. The specific VOCs to sample will be based on the products used on the sampling day. Most VOCs will have an 8-hour TWA PEL and 15-min Short Term Exposure Limit (STEL) value.</p>
---------------------------------------	---

Nuisance Dust, Mold, and Mildew

Comments & Recommendations	<p>Building Operator & General Maintenance employees at Augsburg University are responsible for periodically cleaning cooling towers with water and Calcium Lime Rust Remover (CLR) as needed.</p> <p>IEA recommends employees wear an N95 respirator when cleaning the cooling towers. It is also recommended that cooling towers are sampled for legionella to ensure there is not an accumulation of growth in the standing water.</p>
---------------------------------------	---

Respirator Users

Required Users	There are currently required respirator users within the Facilities Department - Building Operator & General Maintenance employee group.
Voluntary Users	There are currently voluntary N95 users within the Facilities Department - Building Operator & General Maintenance employee group.

Respiratory Hazard Assessment

FACILITIES DEPARTMENT – CUSTODIAL STAFF

Chemical Usage Review

<p>Safety Data Sheet Compilation Review</p> <p>Chemicals that may require respiratory protection:</p>	<p>Some chemicals indicate that respiratory protection may be required if a chemical dispensing system is not used as directed or if there is an accidental release.</p> <p>3M HB Quat Disinfectant Cleaner Concentrate 3M Bathroom Disinfectant Cleaner Concentrate</p>
<p>Comments & Recommendations</p>	<p>Augsburg University should verify employees in the Facilities Department – Custodial Staff group are utilizing the chemical dispensing systems as directed.</p> <p>IEA recommends an exposure assessment be conducted if employees are not using the chemical dispensing system as directed, or if there is an accidental release to determine if a respirator is needed.</p>

Silica

<p>Comments & Recommendations</p>	<p>Custodial Staff in the Facilities Department who are responsible for cleaning Old Main – Ceramics and Sculpture Studio currently wear an N95 respirator when performing cleaning tasks in this dedicated space.</p> <p>IEA recommends exposure monitoring during different tasks to ensure the airborne concentration of silica and respirable dust does not exceed the OSHA PEL for employees in the Facilities Department – Custodial Staff.</p>
--	---

Respirator Users

<p>Required Users</p>	<p>There are currently required respirator users in Facilities Department – Custodial Staff. Custodial Staff employees who are responsible for cleaning Old Main – Ceramics and Sculpture Studio are required to wear an N95 respirator when conducting cleaning tasks in that studio space.</p>
<p>Voluntary Users</p>	<p>There are currently no voluntary respirator users within the Facilities Department – Custodial Staff.</p>

Respiratory Hazard Assessment

FACILITIES DEPARTMENT - ELECTRICIAN

Silica

Comments & Recommendations	<p>The Electrician within Facilities Department voluntarily uses an N95 mask when conducting hammer drilling tasks due to the possibility for silica exposure. The electrician conducts this task approximately two times/month. In addition, a dust collector attached to a vacuum with a HEPA filter and fine particulate bag is consistently used.</p> <p>IEA recommends exposure monitoring during tasks that involve hammer drilling to ensure the airborne concentration of silica and respirable dust does not exceed the OSHA PEL for employees in the Facilities Department – Electrician.</p>
---------------------------------------	---

Nuisance Dust, Mold, and Mildew

Comments & Recommendations	<p>The Electrician voluntarily wears an N95 mask when conducting various electrical tasks in various spaces across campus due to the possible exposure to insulation/dust or mold and mildew.</p>
---------------------------------------	---

Respirator Users

Required Users	There are currently no required respirator users in Facilities - Electrician group.
Voluntary Users	There are currently voluntary N95 respirator users in the Facilities – Electrician group. IEA recommends Augsburg University has Appendix D forms on file.

Respiratory Hazard Assessment

FACILITIES DEPARTMENT - GROUNDS

Dust and Debris

Comments & Recommendations	Grounds employees voluntarily use an N95 mask when conducting tasks that result in airborne dust and debris, such as mulching or weed whipping.
---------------------------------------	---

Painting Indoors

Comments & Recommendations	<p>Grounds employees, in the past, have been asked to assist with painting indoors. The employee reports not performing this task in the past year, however, has a half-mask respirator specifically for this task. When painting indoors, the employee uses a half-mask respirator (unknown cartridge) as required by the University. The employee does not currently have access to the SDSs for the paint used.</p> <p>When painting outdoors, the employee only uses water-based paint and does not use a respirator.</p>
---------------------------------------	---

Respirator Users

Required Users	There are currently required respiratory users within the Facilities - Grounds group. Employees are currently required to use a half-mask respirator when painting indoors.
Voluntary Users	There are currently voluntary N95 users within the Grounds group. Users currently wear N95 masks when conducting mulching or weed whipping tasks to protect from dust and debris. IEA recommends Augsburg University has Appendix D forms on file.

Respiratory Hazard Assessment

FACILITIES DEPARTMENT – GENERAL MAINTENANCE CARPENTER

Drywall Cutting and Operation

Comments & Recommendations	<p>Employees in the General Maintenance Carpenter group voluntarily wear an N95 mask when cutting drywall.</p> <p>A dust collector is present in the Wood Shop. Employees operate the dust collector when processing wood materials with machinery.</p> <p>Dust is generated during mechanical cutting processes and dust and silica are generated when sanding the drywall compound. IEA recommends exposure monitoring during drywall operations.</p>
---------------------------------------	---

Respirator Users

Required Users	There are currently no required respirator users in Facilities – General Maintenance Carpenter group.
Voluntary Users	There are currently voluntary N95 respirator users in the Facilities – General Maintenance Carpenter group. IEA recommends Augsburg University has Appendix D forms on file.

Respiratory Hazard Assessment

FACILITIES DEPARTMENT – HVAC TECHNICIAN	
<p>Safety Data Sheet Compilation Review</p> <p>Chemicals that may require respiratory protection:</p>	<p>Some chemicals indicate that respiratory protection is required if inadequate ventilation or exposure limits are exceeded.</p> <p>Nu-Brite Coil Cleaner R-22 R-134a R-401A</p>
Comments & Recommendations	<p>IEA recommends reviewing the areas where the chemicals are used to ensure it is adequately ventilated, conducting exposure monitoring to ensure levels are below exposure limits as indicated on the chemicals' SDSs.</p>
<u>Exposure to Chiller System Chemicals (Ethylene Glycol & Ammonia)</u>	
Comments & Recommendations	<p>The HVAC Technician may be exposed to chiller system chemicals (Ethylene Glycol & Ammonia); however, HVAC chiller system chemicals are typically in a closed system. The HVAC Technician is not able to provide the SDS for these chemicals. The HVAC Technician currently does not use respiratory protection when potentially exposed to Ethylene Glycol or Ammonia.</p> <p>If there is a leak or spill while working with the chiller system chemicals, IEA recommends employees wear a full facepiece respirator with Ammonia/Organic vapor cartridges or to conduct exposure monitoring to ensure that exposure is below the OSHA STEL of 35ppm for ammonia and the OSHA ceiling limit of 50 ppm for ethylene glycol.</p>
<u>Dust and Debris</u>	
Comments & Recommendations	<p>The HVAC Technician voluntarily uses an N95 mask when conducting tasks that result in airborne dust and debris, when working with insulation, or working in dusty or poorly ventilated spaces. The HVAC Technician estimated they may occasionally work with fiberglass insulation in attic spaces or in HVAC ducts.</p> <p>IEA recommends exposure monitoring during a worst-case scenario workday for total and respirable dust.</p>

Respiratory Hazard Assessment

Respirator Users

Required Users	There are currently no required respirator users in the Facilities – HVAC Technician group.
Voluntary Users	There are currently voluntary N95 respirator users within the Facilities – HVAC Technician group. IEA recommends Augsburg University has Appendix D forms on file.

Respiratory Hazard Assessment

FACILITIES DEPARTMENT - PAINTER

Chemical Usage Review

<p>Safety Data Sheet Compilation Review</p> <p>Chemicals that may require respiratory protection:</p>	<p>While the University does not have the SDSs available to review for this employee group, some chemicals may indicate that respiratory protection is required if inadequate ventilation or exposure limits are exceeded. The University is supplied by Sherwin Williams paint.</p> <p>Oil-Based Paints (UPshot) Latex Paints Epoxy-Based Paints (Rustoleum Brand)</p>
<p>Comments & Recommendations</p>	<p>Employees in the Painter group use a half-mask respirator with organic vapor cartridges and pre-filters when working with Oil-Based Primers and/or Paints.</p> <p>IEA recommends a review of the area to ensure it is adequately ventilated by conducting exposure monitoring to confirm levels are below exposure limits as indicated on the chemicals' SDSs.</p>
<h3><u>Painting</u></h3>	
<p>Painting Method</p>	<p>Painting is conducted by hand, using a texture-sprayer, and aerosol spray paint.</p> <p>In a worst-case scenario, aerosol spray paint is used for 10 minutes/day. The texture-sprayer is used infrequently (1-2 times/over the past year).</p>
<p>Comments & Recommendations</p>	<p>IEA recommends exposure monitoring for various volatile organic compounds if the task duration is increased. The specific VOCs to sample will be based on the products used on the sampling day. Most VOCs will have an 8-hour TWA PEL and 15-min Short Term Exposure Limit (STEL) value.</p>

Respiratory Hazard Assessment

<u>Gypsum Board Taping, Cutting, and Sanding</u>	
Painting Method	<p>Employees in the Facilities Department – Painting group also conducts drywall work (taping, cutting, sanding) for 20 hours/week maximum. An SDS for the most frequently purchased brand of gypsum board is available (ToughRock Mold-Guard Gypsum Board).</p> <p>Employees in the Facilities Department – Painting group do not use a saw to cut the drywall. If removing the drywall, the employee would utilize a particulate respirator.</p>
Comments & Recommendations	IEA recommends exposure monitoring during different tasks to ensure the airborne concentration of silica and respirable dust does not exceed the OSHA PEL for all employees in the Facilities Department – Painting group.

Respirator Users

Required Users	There are currently required respirator users in the Facilities Department - Painter group.
Voluntary Users	There are currently no voluntary users within the Facilities Department – Painter group.

Respiratory Hazard Assessment

NURSING DEPARTMENT - FACULTY

Supervision of Students in a Clinical Setting

<p>Comments/Recommendations</p>	<p>Doctoral Nursing Faculty supervises students in a clinical setting. When supervision in the clinic occurs, N95 mask use may be optional, and faculty may voluntarily use an N95 mask. The supervising clinic would supply the N95 mask when recommended.</p> <p>BSN Nursing Faculty currently do not supervise students in a clinical setting, and therefore do not voluntarily use an N95 mask. The BSN Nursing Faculty group is entirely remote.</p>
---------------------------------	---

Respirator Users

<p>Required Users</p>	<p>There are currently no required respirator users in Nursing – Faculty group.</p>
<p>Voluntary Users</p>	<p>There are voluntary N95 users within the Nursing – Faculty group. IEA recommends Augsburg University has Appendix D forms on file.</p>

Respiratory Hazard Assessment

THEATRE DEPARTMENT – PRODUCTION MANAGER AND TECHNICAL DIRECTOR

Chemical Usage Review

<p>Safety Data Sheet Compilation Review</p> <p>Chemicals that may require respiratory protection:</p>	<p>While the University does not have the SDSs available to review for this employee group, some chemicals may indicate that respiratory protection is required if inadequate ventilation or exposure limits are exceeded.</p> <p>Aerosol Paint Latex Paint Various Stains Various Solvents Denatured Alcohol Lacquer Thinner</p>
Comments & Recommendations	<p>Employees in the Theatre Department – Production Manager and Technical Director group voluntarily use a half-mask respirator when working with chemical vapors.</p> <p>IEA recommends a review of the area to ensure it is adequately ventilated by conducting exposure monitoring to confirm levels are below exposure limits as indicated on the chemicals’ SDSs.</p>
<u>Painting</u>	
<p>Painting Method</p>	<p>Painting is conducted by hand, using a High-Volume Low-Pressure spray painter, and an Airless spray painter. They spray painters are used for a maximum of 3 hours/day in a one-week timeframe. However, the work can be variable and intermittent. All work is conducted indoors (in the “shop”), with a door open and fan used. No spray-paint booth available. The sprayers utilize Latex paint.</p> <p>Aerosol spray paint use is conducted outdoors, when possible, but at times may be conducted indoors, with a door open and fan used.</p>
Comments & Recommendations	<p>IEA recommends a review of the chemicals used to determine if exposure limits could be exceeded based on the information provided on the SDSs.</p>

Respiratory Hazard Assessment

<u>Welding</u>	
Amount of time spent per day welding/cutting/brazing	3 hours/day for one week
Location where welding may take place and ventilation utilized	Indoors (in the “shop” – Doors Open, Fan On)
Thickness of material being utilized	Unknown
Type of metal being utilized	Ferrous Steel
Type of hot work	MIG
Comments & Recommendations	IEA recommends a review of the metals and welding rods used in the welding process. IEA recommends exposure monitoring during welding tasks to ensure the airborne concentration of the various metals does not exceed the OSHA PELs.

<u>Respirator Users</u>	
Required Users	There are currently no required respirator users in the Theatre Department – Production Manager and Technical Director Group.
Voluntary Users	There are currently voluntary Half-mask Respirator users within the Theatre Department – Production Manager and Technical Director. IEA recommends that Augsburg University has Appendix D forms on file. In addition, IEA recommends the voluntary half-mask users undergo a respirator medical evaluation prior to wearing the half-mask respirator.