

Job Hazard Analysis

JHA Name: Compressed Air for Cleaning & Drying



Assessment Date: 01-02-14

Revision Date: 04-04-17

Building or Location: North Mankato & Faribault Campus

Department or Program: Maintenance, Technical Programs

Description of Individual Tasks or Assignments: Using Compressed Air to Clean/Dry Work Surfaces, Equipment, or Materials

Tools, Equipment, or Machinery Used when Performing Task: Air Nozzles/Guns, Air Hoses, Compressors

Hazard Type(s) Associated with Task or Assignment:		Check for Exposure:	Specific Hazard Exposure:	Check if Exposure Recommends or Requires a Style of PPE?
1	Impact <u>Example:</u> Person(s) can strike an object, or be struck by a moving or flying/falling object (e.g., fragments, chips, particles, sand, dirt/debris).	X	Potential exposure to flying fragments, particles and debris generated from cleaning/drying work surfaces, equipment, or materials with compressed air (e.g., injuries to eyes)	X
2	Penetration or Cut <u>Example:</u> Person(s) can strike an object, be struck by an object, or fall upon an object or tool that would cut or otherwise break the skin.	X	Potential exposure to air entering body through openings or breaks in skin (e.g., eyes, ears, mouth/nose, navel, cuts, etc...) when cleaning self or clothing with compressed air (e.g., severe injury to body part/system or death)	X
3	Crush or Pinch <u>Example:</u> An object(s) or equipment/machine may crush or pinch a body or body part			
4	Chemical or Harmful Dust <u>Example:</u> Exposure to chemicals (i.e., hazardous substances and harmful physical agents), infectious agents from spills, splashing, physical contact, and/ or exposure to dusts, vapors, fumes, or gases that could cause illness, irritation, burns, asphyxiation, breathing/vision difficulty, sensitization, infection, or other toxic health effects (i.e., acute or chronic). Note: "May also have or create ignition potential."	X	Potential exposure to nuisance dusts generated from using compressed air in cleaning (e.g., respiratory irritation/discomfort), potential exposure to generated fine airborne dusts (e.g., organic materials) mixing with air from compressed air in cleaning to create a dangerous atmosphere (e.g., fire and explosion)	X
5	Heat <u>Example:</u> Exposure to radiant heat sources, sparks, and splashes or spills of hot material			
6	Light (optical) Radiation <u>Example:</u> Exposure to strong light sources, glare, or intense light exposure which is a byproduct or a process. Note: "This category may also include hazards presented from lack of light (e.g., working in dark spaces/areas)."			
7	Electrical Contact <u>Example:</u> Exposure, contact, or proximity to live or potentially live electrical objects.			
8	Ergonomic/ Human Factors <u>Example:</u> Working in cramped spaces, repetitive movements, awkward postures, vibration, heavy lifting, etc... Note: "This category may also include unique hazards presented from tasks that require demanding or challenging degrees of mental and/or physical effort to be exerted by an individual. See <i>Physical Effort Definition/Examples</i> category for further explanation of physical effort."			
9	Environmental <u>Example:</u> Exposure to noisy environments, hot or cold work environments, poor weather conditions, working at a height, and any other conditions in the workplace that could cause danger, discomfort, and/or negative health effects.	X	Potential exposure to loud/prolonged noise (compressed air)	X

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Personal Protective Equipment Requirements:	
Eyes & Face:	Face-shield worn over Safety Glasses with Side Shields, or Goggles (Required when using compressed air to clean)
Head & Ears:	Hearing Protection Devices (Required when using compressed air to clean)
Whole Body:	Impervious Coveralls or Aprons (Recommended when using compressed air to clean)
Feet:	
Hands:	Leather Gloves (Required when using compressed air to clean)
Respiratory:	N95 Particulate Masks (Optional/ Available not required)
Other:	

Other Control Measures or Requirements (Engineering & Administrative Controls):

#1) Impact Hazards, & #2) Penetration or Cut Hazards: Personnel should never use compressed air to clean themselves or their clothing. Personnel using compressed air for cleaning/drying must follow approved guidelines that include reducing air pressure to 30 p.s.i and have appropriate chip guarding in place. If there is a risk of particulates/debris flying back into the operator's face, it is recommended to use air nozzles/guns equipped with chip guards or that generate air curtains around the nozzle to reduce fly back. Make sure not to use compressed air for cleaning/drying in areas where you may accidentally expose other personnel to compressed air hazards. Never participate in horseplay with compressed air. Never point an air nozzle/gun or direct its airstream towards another individual. **#4) Chemical or Harmful Dust Hazards:** Personnel should receive Right-to-Know training (e.g., regarding chemical & physical hazards). SDS should be provided/available for all hazardous chemicals. Particulate masks available upon request for personnel experiencing respiratory discomfort from dusts generated. Local Exhaust Ventilation (LEV) should be provided/maintained on equipment or processes that generate large amounts of dust/debris to reduce housekeeping hazards. Whenever feasible, it is recommended that personnel use alternative cleaning methods instead of compressed air. Alternative techniques include; wet sweeping, sweeping compounds, vacuum cleaners equipped with special filters (e.g., HEPA filters), or other devices to prevent dusts from being re-circulated through the air. Under no circumstances may compressed air be used to clean areas where the dust recirculating in the air (generally of enclosed spaces) could potentially create a flammable or explosive atmosphere. "Note: Personnel should consult their Supervisor and Safety Personnel for appropriate direction in these types of cleaning situations." **#9) Environmental Hazards:** Personnel should receive Hearing Conservation training (e.g., regarding noise hazards). Personnel using compressed air for cleaning/drying should be included in the Hearing Conservation Program. **Miscellaneous Considerations:** Air nozzles/guns using compressed air for drying/cleaning must be regulated or reduced to allow no more than 30 p.s.i. "Note: Majority of air-line systems range in pressure from 90-120 p.s.i; consequently, pressure-reducing nozzles must be used." Dead-man switches or constant pressure triggers must be equipped on all air nozzles/guns to stop air flow if the nozzle is released or dropped. Operators of tools, equipment, and machinery should read and follow all Manufactures' recommendations/requirements (e.g., inspections, servicing/maintenance, safe usage, etc...). Any tools, equipment, or machinery found damaged, defective, or otherwise unsafe should immediately be removed from service and not used until repaired or replaced. Personnel should always consult their Supervisors on the selection and use of PPE for the tasks being performed.

Physical Effort Definition/Examples

1.) Physical Mobility- Movement from place to place on the job, considering distance and speed **2.) Physical Agility-** ability to maneuver body while in place or in static position **3.) Physical Strength (Light to Moderate)-** Ability to handle routine office materials and tools **4.) Physical Strength (Moderate to Heavy)-** Ability to handle 50lbs+ objects, considering frequency **5.) Dexterity-** skill and ability in using hands, fingers, and feet **6.) Physical Balance-** ability to maintain balance and physical control **7.) Coordination-** harmonious functioning of body parts (e.g., eye/hand, hand/foot, etc...) **8.) Endurance-** ability to sustain a prolonged stressful effort or activity with limited opportunity to rest

Note: "This JHA provides only the minimum PPE/safety requirements necessary to safely complete the task or assignment, and the JHA only covers the hazards or exposures that are most likely to be encountered. Nothing within this JHA bars or restricts personnel from requesting higher degrees of PPE or control to mitigate workplace hazards. In addition, South Central College personnel (e.g., employees and students) are required to complete any applicable safety or on-the-job trainings required prior to performing their positions or participating in their programs of study. Finally, South Central College personnel should consult their supervisors/instructors, the college's written safety programs/policies, and/or the Security & Safety Director whenever they have questions or concerns."

Certification: This document certifies a hazard assessment was conducted meeting the provisions specified under 29 CFR 1910.132 (d) and South Central College's related safety programs and policies.

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Date: 04-04-17