

JOB HAZARD ANALYSIS Welding Operations	JOB TITLE: OxyAcetylene Welder	Created: 5/15/2007	Revise Date:	JHA Creator: Beverly Maki	Title: OSHEM Saf Spec
	WORK LOCATION (ROOM NO.): Most welding shops	DEPARTMENT:	TOOL/MACHINE MAKE AND MODEL: Oxy-Acetylene welding machine, model xxx		

Task(s)	Define Activities/Equipment Used (note frequency/duration)	POTENTIAL HAZARDS	REQUIRED CONTROLS/WORK PRACTICES	REQUIRED PPE
	Oxy-Acetylene welding, used on average <u>X</u> times a day, <u>X</u> days a week by X # of welders.			
1. Turn torch on	1a. Wipe down work area with damp cloth (water)	Spilling water could cause slip/trip. Not cleaning area could leave dust particles/combustibles that could flare	Slowly apply small amount of water to cloth and wipe down work area. Ensure fire extinguishers are available and charged.	N/A
	1b. Uncoil and straighten hoses from cylinders.	Loose hose on floor could cause slip/trip. Damaged hose could cause leak/fire	Ensure uncoiled hoses will not be a tripping hazard. Ensure there are no kinks, cracks or damage to hoses. Ensure all torch valves are closed and inspect for possible leaks.	N/A
	1c. Adjust screws on regulators so they are backed off.	Gas leak could cause fire	Ensure adjustment screws on regulators are backed off so no tension is present for both acetylene and oxygen.	N/A
	1d. Open cylinder valve slowly by turning counterclockwise.	None	None	N/A
	1e. Turn adjustment screw clockwise to desired pressure	None	Know the correct pressure for type equipment	
	1f. Crack open acetylene valve on torch body.	Potential gas accumulation if not prepared to light	Have striker available	Safety glasses, work gloves
	1g. Use striker to ignite torch	Potential gas accumulation Spark production (could ignite other material)	Quickly, so not to let gas accumulate, hold torch facing away from face, body and portable unit. Using other hand, strike flint approximately 2 inches from tip of torch.	Safety glasses, work gloves
	1h. Adjust acetylene torch body valve	Incorrect adjustment could cause flame out, undesirable magnitude	Adjust acetylene torch body valve to desired flame	Safety glasses, work gloves
	1i. Open oxygen valve on torch body	Incorrect adjustment could cause flame out, undesirable magnitude	Slowly open oxygen valve on torch body to achieve desired flame.	Safety glasses, work gloves
2. Perform weld	2a. Have flux and welding rods appropriate for type weld and material being welded	Improper weld due to improper selection of flux and welding rods	Welding training should cover when and how to use different fluxes and welding rods. Adhere to the training.	

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	2b. Perform weld	2b1. Fire or Explosion	1. Updated (annual) Welding shop burn permit required. 2. If welding outside shop, Burn Permit from Authorized Person required. 3. Do not weld near flammable material. Move flammables at least 35 feet away or protect them with flame-proof covers. 4. Do not weld on drums, tanks or any closed containers unless a qualified person has tested it and declared it or prepared it to be safe.	
		2b2. Breathing welding fumes	1. Use enough forced ventilation or local exhaust (forced suction) at the arc to remove fumes from breathing area. 2. Use portable smoke eater when out on a job. 3. Use welding helmet that has fresh air supply. 4. Keep your head out of the fumes and do not breathe fumes.	Welder's cap; safety glasses, oxygen fed respirator, if required; Welder's face shield; welder's gloves; welder's apron
		2b3. Sparks could burn eyes, hands, clothes	1. Wear welder's cap, eye protection, face shield, gloves, apron 2. If welding outside with breeze, use wind break and line of sight barrier to protect passers-by.	Welder's cap, eye protection, face shield, gloves, apron
	3c. Perform weld with arc welder	2b4. Arc rays can burn eyes	1. Use welding helmet with correct shade of filter. 2. Use welding curtain to shield other employees and visitors from arc rays.	Welder's cap, eye protection, face shield, gloves, apron
		2b5. Smoke may set off smoke alarm or sprinkler system	Follow procedures/protocols listed in Chapter XX, Fire Protection Impairment Permit whenever working closer than 35 feet from a sprinkler head or smoke detector.	Welder's cap, eye protection, face shield, gloves, apron
	2c. Weld heating, AC, water, steam, condensate return lines.	2c1.. Contents of piping could cause burns	Drain piping at welding area, wearing insulated gloves, eye protection or whatever other PPE based on pipe contents.	Welder's cap, eye protection, face shield, gloves, apron
	2d. Perform weld on or near electrical devices	2d1. Electrical shock, cuts and burns	Use lock-out/tag-out procedures.	Welder's cap, eye protection, face shield, gloves, apron
3. Turn off torch	3a. Close acetylene valve on torch body	Valve and stem (pinch points)	Position fingers on acetylene valve ensuring they do not come in contact with the valve stem. Turn valve clockwise.	Welder's cap, eye protection, face shield, gloves, apron

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	3b. Close oxygen valve on torch body	Valve and stem (pinch points)	Position fingers on oxygen valve ensuring they do not come in contact with the valve stem. Turn valve clockwise.	Welder's cap, eye protection, face shield, gloves, apron
	3c. Turn the acetylene valve clockwise	Valve and stem (pinch points)	Position fingers on acetylene valve ensuring they do not come in contact with the valve stem. Turn valve clockwise.	Welder's cap, eye protection, face shield, gloves, apron
	3d. Turn the oxygen valve clockwise	Valve and stem (pinch points)	Position fingers on acetylene valve ensuring they do not come in contact with the valve stem. Turn valve clockwise.	Welder's cap, eye protection, face shield, gloves, apron
	3e. Close adjustment screws on acetylene regulator	None	N/A	None
	3f. Close adjustment screws on oxygen regulator	None	N/A	None
	3g. Slowly open Acetylene valve on the torch body to bleed lines.	Gas (potential inhalation, explosion)	Position torch nozzle away from personnel and any heat source. Open valve on torch body.	None
	3h. Slowly open oxygen valve on the torch body to bleed lines.	Gas (potential explosion)	Position torch nozzle away from personnel and any heat source. Open valve on torch body.	None
	3i. Close acetylen valve on torch body	Valve and stem (pinch points)	Position fingers on acetylene valve ensuring they do not come in contact with the valve stem. Turn valve clockwise.	None
	3j. Close oxygen valve on torch body	Valve and stem (pinch points)	Position fingers on acetylene valve ensuring they do not come in contact with the valve stem. Turn valve clockwise.	None