

NC Job Risk Assessment

Name(s) of Risk Team Members: L. Davis, D. Elling, R. Sabatini	Point Value → Parameter ↓	1	2	3	4	5
	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Title: Compressed Gas Transportation and Use Number or Job Identifier: NC-JRA-004	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Job Description: Transporting and working with compressed gas cylinders and systems, including flammable gases, and fuel-gas soldering and welding systems.	Likelihood (D)	Extremely Unlikely	Unlikely	Possible	Probable	Multiple
Training and Procedure List (Optional):						
Approved by: R. Sabatini Rev. #: 1						
Stressors (if applicable, please list all): Weather conditions		Reason for Revision (if applicable): 3-yr cycle			Comments:	

Job Step / Task	Hazard	Control(s)	Before Additional Controls					Control(s) Added to Reduce Risk	After Additional Controls						
			Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D		Risk* AxBxCxD	Stressors Y/N	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD
Storage of gas cylinders at bulk storage areas and loading docks	Being struck by object due to pressure release	Cylinder certification, storage area conditions, OSHA compliance, cylinders capped and secured, PPE	Y	1	4	4	2	32							
	Exposure to highly toxic gases	Vented cabinets used for highly toxic gases, dedicated storage bunker	Y	1	2	5	2	20							

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	Explosion or fire due to ignition of gas	Storage area conditions, cylinder certification, dedicated storage bunker, quantity of cylinders, equipment inspection, separation of fuel and oxidizer cylinders, OSHA compliance, cylinders capped and secured	Y	1	2	5	2	20							
Transporting cylinders from storage to use area	Overexertion injuries caused by excessive lifting, pushing, pulling, holding, carrying	Wheeled gas carts, training, cylinders secured, PPE	N	1	3	3	2	18							
	Being struck by object due to pressure release from failure of equipment	Cylinder cart design/certification, equipment inspection, training, cylinders capped and secured	N	1	3	4	2	24							
Attaching regulator to cylinder	Being struck by object due to pressure release; gas release	Regulator design/certification, equipment inspection, safety glasses, training, cylinders secured	N	1	3	4	2	24							
Connecting regulated cylinder to system	Being struck by object due to pressure release	Cylinder/regulator design/certification, equipment inspection, training, system design/review, isolation valves, OSHA compliance, cylinders secured, safety glasses	N	1	3	3	3	27							

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Connecting regulated cylinder to system	Explosion due to improper regulator (e.g., oiled regulator on oxygen cylinder)	Use of properly rated regulator, no use of adapters, training, Tier 1	N	1	3	5	2	30							
Storing gas cylinders in use areas	Being struck by object due to pressure release; gas release	Cylinder certification, OSHA compliance, cylinders capped and secured; secured	N	1	3	5	1	15							
Use of compressed gases	Being struck by object due to pressure release	Equipment inspection, training, system design/review, safety glasses, OSHA compliance, cylinders secured	N	1	3	3	2	18							
	Contaminated or mislabeled cylinder	QA specifications	N	1	1	5	2	10							
	Oxygen deficiency	System design/review, ventilation, ODH review, Tier 1, Training, ESR's	N	1	2	5	2	20							
	Poisoning or lung damage due to inhalation of toxic gas	System design/review, MSDS, ventilation, Tier 1	N	1	2	5	2	20							
Use of flammable or oxidizing gas (in addition to above hazards)	Explosion or fire due to ignition of gas; failure of flexible lines	System design/review, MSDS, ventilation, Tier 1, OSHA compliance, cylinders secured, removal of heat or spark sources, fire retardant clothing	N	1	2	5	2	20							
	Contaminated or mislabeled cylinder causing fire or explosion	QA specifications	N	1	1	5	1	5							

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	Explosion or fire due to reaction of gas with surroundings	System design/review, MSDS, ventilation, Tier 1, OSHA compliance, segregation of materials, Training	N	1	2	5	2	20							
Use of fuel-gas system for soldering, welding or other operation	Explosion due to improper gas mixture	Training, burning permits, OSHA compliance, MSDS, proper nozzles and ignition devices, ventilation	N	1	2	5	1	10							
Use of fuel-gas system for soldering, welding or other operation	Explosion or fire due to leaking hoses, nozzles or valves	Equipment inspections, Tier 1, training, OSHA compliance; segregation when not in use	N	1	2	5	3	30							
	Fire due to ignition of surrounding materials or clothing	Area inspections and preparation, Tier 1, training, fire retardant clothing, fire extinguisher	N	1	2	5	3	30							
	Contact with heated objects resulting in burns	Work area conditions, Tier 1, burning permits, training, gloves, proper tools or tongs	Y	1	2	3	3	18							
	Personnel injury from welding, eye injury	Welding helmet or other body & eye protection, training, OSHA compliance, burning permits	Y	1	2	4	3	24							

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Disconnecting gas supply from system	Being struck by object due to pressure release	Cylinder/regulator design/certification, equipment inspection, training, system design/review, isolation valves, safety glasses, OSHA compliance, cylinders secured	N	1	3	3	2	18							
Removing regulator from cylinder	Being struck by object due to pressure release	Cylinder/regulator design/certification, equipment inspection, training, system design/review, safety glasses, OSHA compliance, cylinders secured	N	1	3	3	2	18							
Transporting spent cylinder to storage area	Overexertion injuries caused by excessive lifting, pushing, pulling, holding, carrying an object	Wheeled gas carts, training, safety shoes, cylinders capped and secured	N	1	2	3	2	12							
Further Description of Controls Added to Reduce Risk:															
*Risk:	0 to 20 Negligible	21 to 40 Acceptable	41 to 60 Moderate				61 to 80 Substantial				81 or greater Intolerable				