

NC Job Risk Assessment

Name(s) of Risk Team Members: L. Davis, D. Elling, S. Hoey, W. Litzke, A. Piper	Point Value Parameter → ↓	1	2	3	4	5
Job Title: <i>Work with chemicals in laboratories</i>	Frequency (B)	≤once/year	≤once/month	≤once/week	≤once/shift	>once/shift
Job Number or Job Identifier: NC-JRA-003	Severity (C)	First Aid Only	Medical Treatment	Lost Time	Partial Disability	Death or Permanent Disability
Job Description: Handling chemicals with the following hazards: Carcinogens, Highly acute Toxin, Reproductive toxins, Corrosives, Strong Oxidizers, Highly Reactive Materials, Perchlorates, Oils, Explosives, Peroxide forming, Pyrophoric Materials	Likelihood (D)	Very Unlikely	Unlikely	Possible	Probable	Multiple
Training Procedures List (Optional):						
Approved by: S. Hoey Date: 12/24/07 Rev. #: 0						
Stressors (if applicable, please list all) (1) Environmental; (2) Temperature; (3) Time restraints	Reason for Revision (if applicable):			Comments:		

Job Step/Task	Hazard	Control(s)	Before Additional Controls					Control(s) Added to Reduce Risk	After Additional Controls					% Risk Reduction	
			Stressor	# of People A	Frequency B	Severity C	Likelihood D		Risk* AxBxCxD	Stressors	# of People A	Frequency B	Severity C		Likelihood D
1. Storing Chemicals	Fire; Explosion; spill; chemical reactions; exposure via inhalation to vapors, mists, dusts	Segregation of hazard types; flammable and acid cabinets; guidance in Working with Chemicals Subject Area; CMS; work planning procedures; PPE; area monitoring; ventilation; secondary containment; spill response; use of safer substitutes; Tier 1 inspections; container labeling; area posting; shelf-life monitoring; containers specific for the hazard and operation; controlled atmosphere (glove box)	N	1	4	3	1	12							
2. Moving containers	spillage via tripping/dropping;	guidance in Working with Chemicals Subject Area CMS; work planning	N	1	5	3	2	30							

NC Job Risk Assessment

Job Step/Task	Hazard	Control(s)	Before Additional Controls						Control(s) Added to Reduce Risk	After Additional Controls					% Risk Reduction
			Stressor	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD		Stressors	# of People A	Frequency B	Severity C	Likelihood D	
within the lab	explosion with exposure to vapors, mists, dusts	procedures; PPE; area monitoring; personnel monitoring; secondary containment; spill response; hazardous and radioactive waste controls; Tier 1 inspections; container labeling; containers specific for the hazard and operation													
3. Measuring chemicals-pipeting; balances; filling sample cells, etc.	spillage; exposure to vapors, mists, dusts	guidance in Working with Chemicals Subject Area; CMS, work planning procedures; PPE; area monitoring; personnel monitoring; use of small volumes; ventilation; secondary containment; spill response; fume hoods/glove box; use of safer substitutes; Tier 1 inspections; container labeling; area posting; containers specific for the hazard and operation	N	1	4	3	3	36							
4. Mixing, reacting; & synthesizing hazardous substances	uncontrolled reactions; exothermic reaction; explosions; exposure to vapors, mists, dusts; creation of unknown hazards	guidance in Working with Chemicals Subject Area; CMS, work planning procedures; PPE; area monitoring; personnel monitoring; use of small volumes; ventilation; secondary containment; spill response; use of safer substitutes; container labeling; area posting; reactions vessels designed specific for the hazard	Y	1	3	3	3	27							
5. Distilling & rotovap of hazardous substances	uncontrolled reactions, exothermic reaction, exposure to vapors, mists, dusts	guidance in Working with Chemicals Subject Area; CMS, work planning procedures; PPE; area monitoring; personnel monitoring; use of small volumes; ventilation; secondary containment; local exhaust spill response; use of safer substitutes; Tier 1 inspections; container labeling; area posting; reactions vessels designed specific for the hazard	Y	1	3	3	3	27							
6. Analysis by instrumentation such as HPLC, GC, ICP, AA, MS, electrodes, thermometer	exposure to vapors, mists, dusts	guidance in Working with Chemicals Subject Area; CMS, work planning procedures; PPE; area monitoring; personnel monitoring; use of small volumes; ventilation; secondary containment; spill response; use of safer substitutes; container labeling; area posting; containers specific for the hazard and operation	N	1	2	1	2	4							

NC Job Risk Assessment

Job Step/Task	Hazard	Control(s)	Before Additional Controls						Control(s) Added to Reduce Risk	After Additional Controls					% Risk Reduction
			Stressor	# of People A	Frequency B	Severity C	Likelihood D	Risk* AxBxCxD		Stressors	# of People A	Frequency B	Severity C	Likelihood D	
7. Inhalation of fugitive by-products	Inhalation, skin exposure of hazardous gases	Training, use of fume hoods, glove box and exhausted equipment, PPE	N	1	5	3	2	30							
8. Handling, storing, testing, and distilling peroxide forming compounds	rupture of container; exposure to vapors; explosion; spillage via tripping/dropping;	Periodic testing as per SBMS WWC; CMS, work planning & ESR, procedures; PPE; area monitoring; personnel monitoring; use of small volumes; ventilation; secondary containment; spill response; use of safer substitutes; Tier 1 inspections; container labeling; shelf-life monitoring; containers specific for the hazard and operation	Y	1	2	3	2	12							
9. Handling, storing, testing pyrophoric compounds, fine powders	rupture of container; exposure to vapors, dust, mists, fumes; fire; spillage via tripping/dropping;	guidance in Working with Chemicals Subject Area; CMS, work planning procedures; PPE; area monitoring; personnel monitoring; use of small volumes; ventilation; secondary containment; spill response; use of safer substitutes; Tier 1 inspections; container labeling; shelf-life monitoring; containers specific for the hazard and operation, proper extinguisher media (Class D), awareness of static electricity potential.	Y	1	2	3	3	18							
10. Handling, storing, testing sensitizers & acute toxins	exposure to vapors; dust, mists, fumes; fire; spillage via tripping/dropping;	guidance in Working with Chemicals Subject Area; CMS, work planning & ESR, procedures; PPE; area monitoring; personnel monitoring; use of small volumes; ventilation; secondary containment; spill response; use of safer substitutes; Tier 1 inspections; container labeling; area posting; containers specific for the hazard and operation	Y	1	2	5	2	20							
11. Transporting of chemicals to other locations within a building	spillage via tripping/dropping;; exposure to vapors, mists, dusts	work planning procedures; PPE; use of small volumes; secondary containment; spill response; use of safer substitutes; container labeling; containers specific for the hazard and operation, SBMS Transportation, Chemical Control Areas	N	1	3	3	2	18							

NC Job Risk Assessment

Job Step/Task	Hazard	Control(s)	Before Additional Controls					Control(s) Added to Reduce Risk	After Additional Controls					% Risk Reduction	
			Stressor	# of People A	Frequency B	Severity C	Likelihood D		Risk* AxBxCxD	Stressors	# of People A	Frequency B	Severity C		Likelihood D
12. Transporting of chemicals to other locations outside a building but within BNL	spillage via tripping/dropping; exposure to vapors, mists, dusts	Small quantities, PPE, secondary containment	N	1	2	2	2	8							
13. Transporting of chemicals to other locations outside of BNL	spillage via tripping/dropping; exposure to vapors, mists, dusts	See SBMS subject area, DOT Shipping	N	1	2	2	2	8							

*Risk:	0 to 20	21 to 40	41-60	61 to 80	81 or greater
	Negligible	Acceptable	Moderate	Substantial	Intolerable