

CHEMICAL USE OPERATIONS SAFETY AUDIT/SURVEY TOOL

Chemical Inhalation, Explosion and Burn Injury Prevention

Instructions: This is a scored pro-active safety auditing tool designed for periodic use to reduce high risk behaviors and increase safe behaviors. “Yes” answers should be scored at (1) and “No” answers should be scored at (0). In the corrective action column, either a time frame for completing the correction or the actual date corrective action was completed should be noted. Check the “NA” column if this item is not applicable. Total and track audit scores over time to track up or down trends along with tracking the number of incidents, accidents and injuries sustained.

Chemicals are commonly used in municipal pool, waste water and water treatment operations. Parks, recreation and other municipal departments using strong cleaning agents could find this audit tool useful.

Common chemicals used are Chlorine gas, Caustic Soda (Sodium Hydroxide solution) to adjust a low PH back to neutral (sewer and water treatment), Fluorosilicic Acid (for water fluoridation), Diatomaceous Earth, flocculants (for treating water, very slippery when spilled), Sulfur Dioxide gas and acids or bleaches for cleaning purposes.

These chemicals pose splash/burn and inhalation hazards. Proper water/vapor proof disposable personnel protective equipment (PPE) and either supplied air under positive pressure or respirators with the proper cartridges are recommended during use of these substances. In addition, during changes of large Chlorine gas cylinders, having a back up safety person with escape five minute air supply breathing devices is recommended. Any heavy lifting required to place cylinders or chemical containers into operations, repairing valves and other equipment repair needs to be engineered so lifts are mechanically assisted with overhead chain hoists or done in teams with lifts of less than 50 pounds per person.

Pool, water, and waste water operations have slip/fall hazards and water on pool decks should be frequently clean up with squeegees. In water and waste water plants, fall/slip protection is recommended, especially in winter, and slip-on rubber cleats or other traction devices should be worn on work boots.

Waste water plants have significant methane gas hazards and gas monitoring/alarm systems should be in place and tested frequently. Any heavy lifting associated with valve and other equipment repair needs to be engineered so lifts are mechanically assisted or done in teams with lifts of less than 50 pounds per person. Proper PPE should always be used during repair operations to avoid hand, foot and eye injuries.

Task/Job Part – Proper Training	Yes	No	Corrective action date	NA
All training completed with passing scores in a timely manner				
All training properly recorded				
All training and new employee safety orientation completed				
All training and new employee safety orientation completed for seasonal workers				

Task/Job Part – Human Resources	Yes	No	Corrective action date	NA
Personnel policies applied in a consistent manner				
Fairness – all employees treated the same				
Progressive discipline in place with emphasis on worker integrity and accountability				
Sexual harassment training completed				
Other				

Task/Job Part – Chemical Operations	Yes	No	Corrective action date	NA
System operations sheet reviewed by workers involved with the chemical operation just prior to the operation				
All operations use proper lifting $\leq 50\#$ per person				
Proper PPE in place and checked for tears or openings by fellow worker <ul style="list-style-type: none"> ✓ Back belt in use for lifting operations ✓ Disposable Tyvek type suit (Level C protection) ✓ Heavy rubber work glove and Nitrile under-glove ✓ Disposable bootie over work boot ✓ Respiratory protection – supplied air and hood, positive pressure ✓ Respiratory protection – fit tested respirator with proper cartridges ✓ Face shield or safety glasses for splash protection ✓ Heavy $\geq 8"$ work boot or rubber boot ✓ Slip/fall prevention – slip on over boot as needed 				
For one ton Chlorine cylinders, safety worker back up with escape air supply devices – team of two workers				
All workers trained annually on chemical properties and escape routes – generally uphill and upwind				
All chemicals labeled in proper containers, stored properly				
Worker awareness & sign off as needed so chemicals are not mixed improperly or by accident				
Emergency eye wash and shower stations in good working order				

Task/Job Part – Chemical Operations	Yes	No	Corrective action date	NA
Any chemical spills are properly neutralized and clean up				
Disposable PPE properly disposed of & workers follow best practices for hygiene/personal clean up				

Task/Job Part – Proper Lifting Technique	Yes	No	Corrective action date	NA
Proper position & back belt un place during lifts				
2 or more workers if load is more than 50#				
No lift above waist level				
Overhead hoists or assistive lifting devices properly used				
Stored items >25# stored at waist level for ease in lifting off shelves				
Chemicals & other bagged supplies ordered in bags less than or equal to 50#				

Task/Job Part – Communications	Yes	No	Corrective action date	NA
Maintenance progress and needs reported				
Hazards reported to supervisor and staff				
MSDS & Hazardous Communication Current/old MSDS stored				

Task/Job Part – Monitoring and Safety Monitoring	Yes	No	Corrective action date	NA
Completed all daily/weekly checklists				
Completed any notification or corrective action needed				
Alarm system testing completed				
Air monitoring before confined space entry				
Fall protection properly used				
Proper housekeeping to reduce slip/fall hazards				
Proper monitoring of pool PH and Chlorine levels				

Task/Job Part – Proper Training	Yes	No	Corrective action date	NA
All training completed with passing scores in a timely manner				

Task/Job Part – Completion of all certifications	Yes	No	Corrective action date	NA
All certifications, such as pool operator, waste water plant operator or water plant operator CEUs completed and current				

Task/Job Part – Proper use of incident reporting forms & logs with proper recording	Yes	No	Corrective action date	NA
All worker injuries reported to supervisor and recorded				
All worker accidents involving property, chemicals reported and recorded				
All “near misses” reported to supervisors and recorded				
If a reporting program was in place, all hazards and potential hazards reported and recorded				
A workers compensation claim was filed if a) an injury involved lost time, b) medical care with costs, or c) the worker requested a claim be filed				

Task/Job Part	Yes	No	Corrective action date	NA

Task/Job Part	Yes	No	Corrective action date	NA

Task/Job Part	Yes	No	Corrective action date	NA

TOTAL SCORE

Signature _____ Date _____

Print Name _____