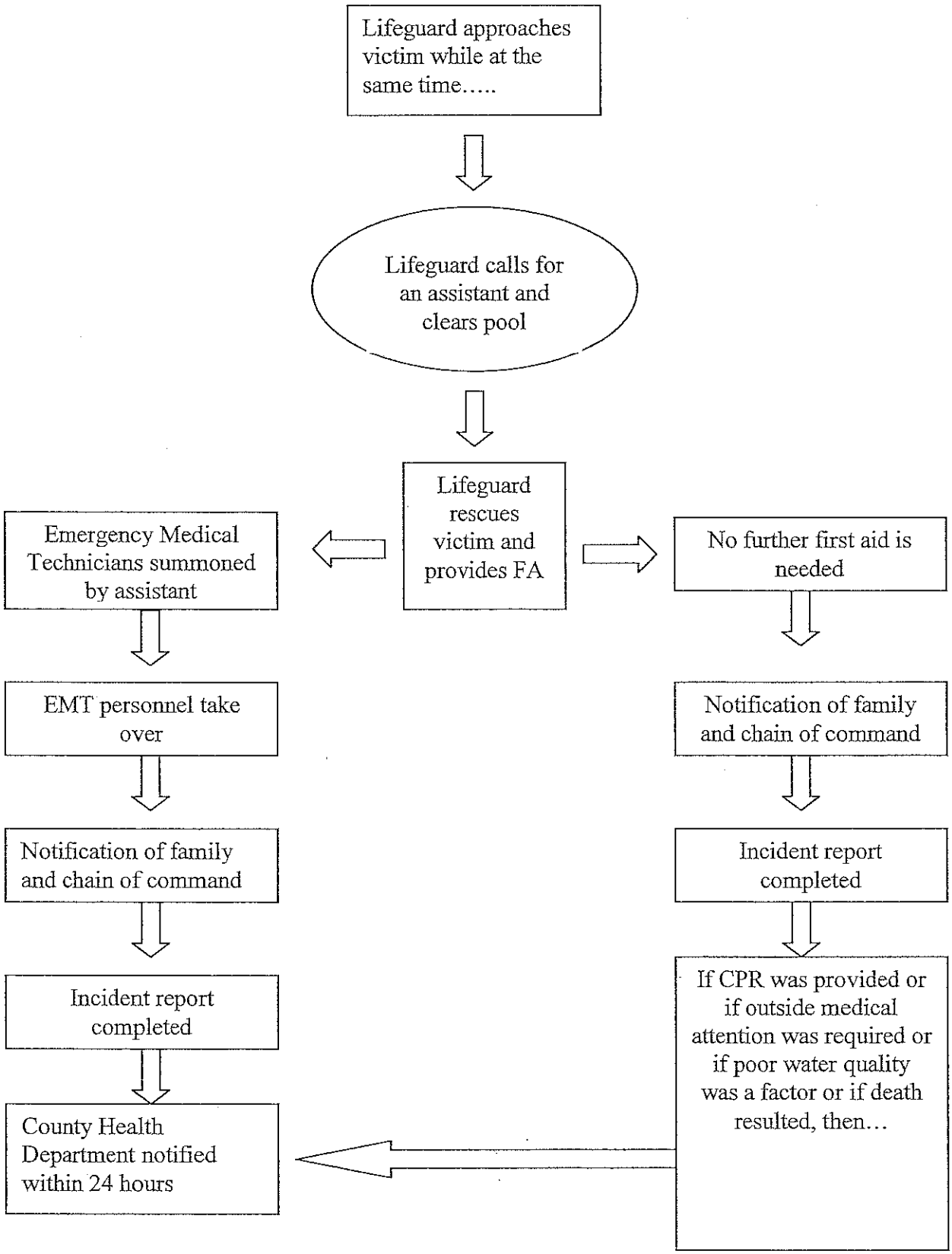
FLOW CHART DURING A POOL INCIDENT



BOARD OF COOPERATIVE EDUCATION SERVICES
First Supervisory District of Monroe County

Daniel T. White, District Superintendent
Monroe #1 BOCES
41 O'Connor Road
Fairport, NY 14450
(585)377-4660

Swimming Pool Injury Log

Date	Time	Name and Address	Age	Nature of Incident	Location	Actions Taken

Monroe County Health Department
Water Supply and Pool Section

Swimming Pool Injury or Illness Reporting Log

Pool Name: _____ Date: _____

Lifeguard on Duty: _____ Telephone: _____

Victim's Name: _____ Telephone: _____

Address:

_____

Guardian's Name: _____ Telephone: _____

Address:

_____

Victim's Age: _____ Male: _____ Female: _____

Describe the incident and treatment given:

_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Time of day of incident: _____

Names and phone numbers of witnesses:

_____
_____
_____

If any of the following occurred, call the Health Department within 24 hours at 274-6057. After hours and weekends call 274-7100, and complete the information below:

1. If CPR was given
2. If death occurred
3. If the victim received professional medical attention in addition to lifeguard first aid
4. If the pool water gave the illness or injury, (for example, the pH was too low and gave skin burns)

If applicable:

Name and telephone number of hospital or clinic where the victim went:

_____
_____
_____
_____
_____

Name and phone number of emergency medical technicians, police, or fire personnel in attendance:

_____
_____
_____
_____
_____
_____

Any other comments:

_____
_____
_____
_____
_____
_____

NEW YORK STATE DEPARTMENT OF HEALTH
Bureau of Community Sanitation and Food Protection

Report on Operation of Swimming Pool

Name of Pool _____ at _____
(name of city, village or town in which pool is located)

County _____ For Month of _____ 19____

Date	Filter Washed Check	Pool Cleaned Check	Total Number of Bathers	Chlorine Used Check ☐ Bromine Used Check ☐	Disinfection: Residual mg/l ☐ Chlorine ☐ Bromine — 1st Test: Time	1st Test: Free	1st Test: Total	2nd Test: Time	2nd Test: Free	2nd Test: Total	3rd Test: Time	3rd Test: Free	3rd Test: Total	Alkalinity mg/l CaCO3	pH	Pool Daily Visible Check	Acid ☐ quarts ☐ pounds	Soda Ash (pounds)	Other	Remarks
1																				
2																				
3																				
4																				
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31																				

Source of Water _____ *Pints of _____ % chlorine in _____ gallons of water

Operator's Signature _____ Date _____

At the end of each month, mail completed report to:

SWIMMING POOLS & WATER SUPPLY
MONROE COUNTY DEPARTMENT OF HEALTH
111 WESTFALL ROAD - ROOM 916
P.O. BOX 92832
ROCHESTER NY 14692-8932

Please see reverse side for important instructions

DOH-1323 (6/89) p 1 of 2

GEN-148

February 29, 19[illegible]

Superintendents of School Districts

Dear Sir:

RE: School Swimming Pools

The regulation for bathing facilities were recently amended by the State's Public Health Council and will become effective in May. These changes are included in the enclosed copy of Subpart 6-1 of the New York State Sanitary Code and could impact pools in your district.

The Code is effective in May and we expect that every effort will be made to comply with it. However, we will not take enforcement action regarding the new items until the fall except where a direct public health hazard is caused by noncompliance. The following items are required by the new code (several of these items are already required):

1. All pools need to be supervised by a qualified lifeguard(s). Minimum qualifications include CPR and advanced lifesaving training certifications issued by the National American Red Cross or equivalent. Current WSI certificates are also acceptable.

2. Written safety plans must be prepared and implemented. Guidelines are available to assist in preparation of such plans.

3. Diving board use should be evaluated. One meter boards need a properly configured diving hopper with 11 feet of water.

4. Additional poolside safety equipment includes a spine board with extradition collars and straps and a pocket mask to assist with CPR.

5. Increased injury incident reporting to my office within 24 hours of such incident.

6. An elevated lifeguard chair for each 2,000 square feet of surface area.

7. Pools in excess of 3,000 square feet of surface area or using gas chlorination will be required to have a qualified swimming pool water treatment operator within one year of the effective date of the Code.

If you have any questions, feel free to contact this office.

Sincerely,

Enclosure

cc: NYSHD Regional Directors of Environmental Health

STATE OF NEW YORK - DEPARTMENT OF HEALTH

INTEROFFICE MEMORANDUM

TO: Regional Directors of Environmental Health
City and County Directors of Environmental Health
District Directors

FROM: Dr. Leo J. Hetling, Director
Division of Environmental Protection

SUBJECT: Acceptable Lifeguard Certifications

DATE: July 22, 1987

Certification and training courses for lifeguards by national organizations has been and are undergoing extensive modification. The Bureau of Community Sanitation and Food Protection will develop an equivalency listing based on specific criteria which soon will be available in the form of a technical reference. In the interim, this memo should be used as guidance to evaluate the acceptability of lifeguard qualifications during 1987. The following courses are now considered as equivalent to Part 6 requirements for acceptable current lifeguard credentials:

1. American Red Cross Advanced Life Savings;

2. American Red Cross Lifeguard Training;

3. American Red Cross Lifeguard Instructor's Certification;

4. YMCA Advanced Life Saving;

5. YMCA Lifeguard;

6. Boy Scouts of America Lifeguard Certification (acceptable only if received in the last three years);

7. Boy Scouts Water Safety Supervisor (acceptable if no more than three years);

8. Canadian Certifications issued by the Royal Life Saving Society, such as "Award of Merit" and the "Distinction Award" are both acceptable if received in the last three years. (The Bronze Medallion and Bronze Cross are not acceptable.)

In addition to the above list, lifeguards who may have received training and certification from the Nassau County Department of Health or the Federal Government National Seashore would also be acceptable.

Finally, all lifeguards must possess Basic Life Support CPR certificates issued during the last 12 months by the American Red Cross or the American Heart Association.

cc: Regional Health Directors/Regional Directors
Mr. Svenson
Mr. Gates

LIFEGUARDING CONCERNS DURING EPILEPTIC SEIZURES:

Epilepsy: is applied to any disorder in which convulsions occur. An epileptic seizure is a state produced by abnormal excessive neuronal discharge within the central nervous system.

There are 4 common types of seizures. Each is listed below:

- Grand mal attacks: occur at any age and are frequently associated with organic brain disease. Convulsions are preceded by attacks of unconsciousness.
- Petit mal attacks: predominantly in childhood. More common than grand mal and less severe, with only momentary loss of consciousness.
- Psychomotor attacks: may develop at any age and are almost always associated with organic brain injury.
- Jacksonian: seizure is characterized by convulsions on one side of the body while conscious. The victim may become unconscious as the attack progresses.

The Epilepsy Foundation of America (EFA) provides the following information relating to the proper handling of a victim who has had a seizure while in the water:

An individual who has a seizure while in the water presents several problems. First, the victim will go under the water quickly, probably with no warning or call for help. Second, the victim will not be able to assist in his or her own rescue. However, there will not be any resistance to the rescuer except possibly by convulsive spasms. Third, the victim will probably have an unprotected airway and will be susceptible to a massive aspiration of water. Last, once the victim has been removed from the water, it will be difficult to determine whether abnormalities in the victim's condition are due to a near drowning or to the aftereffects of the seizure.

If a person is suffering a seizure in the water, the lifeguard's first efforts should be to support the victim so that his or her head and face remain above the water with the head tilted back to provide a clear airway. Precautions should be taken to keep the victim away from the sides of the pool or deck to avoid an injury that can be caused by uncontrolled arm and leg movements. The use of flotation equipment for the victim is very useful in these situations. When possible, the victim should only be removed from the water after the seizure has been completed.

Victims who have seizures in the water are vulnerable to massive aspiration of water. Therefore, special precautions should be taken, and medical attention should be sought. Any victim who has aspirated large quantities of water, especially fresh water, may develop significant lift-threatening medical complications within 30 - 60 minutes. The blood will become extremely diluted, causing hemolysis (breaking up of red blood cells).

AQUATIC CERTIFICATIONS
for NYS Bathing Facilities

Fact Sheet - January 2011
(Go to www.health.ny.gov to view most current certification list.)

When the State Sanitary Code (SSC) requires "lifeguard supervision" or a "qualified lifeguard" at a bathing facility, an approved lifeguard certification SPECIFIC to the type of bathing facility is required.

NOTE:

- All lifeguards are required to possess American Red Cross (ARC) Basic Life Support for the Professional Rescuer cardiopulmonary resuscitation (CPR) or a CPR equivalent noted on the CPR fact sheet unless otherwise indicated. All cardiopulmonary resuscitation certificates are valid for 1 year from course completion, regardless of the expiration date noted on the card.
- Children's camp lifeguards must be at least 17 years of age, except;
  - A maximum of 20% of the required lifeguards on duty may be 16 years of age;
  - Lifeguards for wilderness swimming must be at least 18 years of age.
- Lifeguard certifications shall be valid for the time period specified by the certifying agency, but may not exceed a consecutive three-year period from course completion.
- Supervising lifeguards must possess at least Supervision Level IIb certification, be at least 18 years old, and have at least 2 seasons of lifeguarding experience.

STANDARD	
New York State Sanitary Code	• Subpart 6-1, Section 6-1.31, Swimming Pools • Subpart 6-2, Section 6-2.20, Bathing Beaches • Subpart 7-2, Section 7-2.5(g), Children's Camps

ACCEPTED COURSES

		SUPERVISION LEVEL Marked boxes indicate acceptability		
PROVIDER	**CERTIFICATION TITLE**	**Level I Surf**	**Level II b Pool &**	**Level II a Pool Only**
American Red Cross (ARC)	Lifeguarding (New 2007)			X
	Waterpark Lifeguarding (New 2007)			X
	Waterfront Lifeguarding (New 2007)		X	X
American Lifeguard Association (ALA) CERTIFICATE MUST STATE THE WORDS "INSTRUCTOR-LED COURSE"	Lifeguarding Instructor-Led Course			X
	Waterpark Lifeguarding Instructor-Led Course			X
	Waterfront Lifeguarding Instructor-Led Course		X	X
Boy Scouts of America (BSA) ALL CERTIFICATIONS ARE VALID FOR 3 YEARS FROM DATE OF ISSUANCE AND CARD HOLDER MUST BE AT LEAST 15 YEARS OF AGE (17 YEARS OF AGE FOR CHILDREN'S CAMPS).	Lifeguard, BSA		X	X
	Aquatics Instructor, BSA		X	X
Breezy Point Cooperative, Inc.	Breezy Point Surf Lifeguard	X		
Cattaraugus County EMS	Cattaraugus County EMS Lifeguard Training Program		X	X
Hamptons Consortium	Hamptons Consortium Surf Lifeguard	X	X	X
Ellis & Associates Inc., **International Lifeguard Training Program** Separate certificate for CPR is NOT required. *CERTIFICATE MUST INDICATE COMPLETION OF OPEN WATER TRAINING.	Pool Lifeguard Training			X
	Special Facilities Lifeguard Training			X
	Special Facilities Lifeguard Training with Open Water Training*		X	X
Incorporated Village of Saltaire	Ocean Lifeguard Certificate	X		
	Bay Front Lifeguard Certificate		X	
Lindenhurst School District	Lindenhurst School District Surf Lifeguard	X	X	X

AQUATIC CERTIFICATIONS

For NYS Bathing Facilities

Continued

PROVIDER	CERTIFICATION TITLE	SUPERVISION LEVEL Marked boxes indicate acceptability		
		Level I Surf	Level II b Pool &	Level II a Pool Only
Nassau County Department of Health	"Day Camp Only"			X
	Grade 1A			X
	Grade 1B			X
	Grade II		X	X
	Grade III	X	X	X
New York City Department of Parks	Municipal Lifeguard	X	X	X
	Municipal Lifeguard "pool only"			X
Royal Life Saving Society, Canada ALL CERTIFICATIONS ARE VALID FOR 2 YEARS FROM DATE OF ISSUANCE.	National Lifeguard Service (NLS) Pool			X
	National Lifeguard Service (NLS) Waterfront		X	
	National Lifeguard Service (NLS) Surf	X		
	National Lifeguard Service (NLS) Waterpark			X
Starfish Aquatics Institute, Inc. CERTIFICATION IS VALID FOR 1 YEAR FROM DATE OF ISSUANCE AND CERTIFICATE MUST SPECIFY "MEETS NY STATE DEPARTMENT OF HEALTH REGULATIONS." Separate certificate for CPR is NOT required. *IN "SPECIALTY MODULE TRAINING" SECTION OF CERTIFICATION CARD, "WATERFRONT" MUST NOT BE CROSSED OUT.	StarGuard Best Practices for Lifeguards			X
	StarGuard Best Practices for Lifeguards with Waterfront Specialty Module Training*		X	X
Suffolk County Department of Parks	Ocean Lifeguard Training	X		
	Stillwater Lifeguard Training Course		X	
Town of Babylon	Ocean Lifeguard	X	X	X
	Stillwater Lifeguard Training Course		X	X
Town of Brookhaven	Ocean Theory Course	X	X	X
Town of East Hampton	Surf Lifeguard	X	X	X
	Pool and Beach Lifeguard		X	X
Town of Islip	Surf Lifeguard	X	X	X
	Pool and Beach Lifeguard		X	X
Town of Southampton	Ocean Lifeguard	X	X	X
	Stillwater Lifeguard		X	X
Village of Ocean Beach	Ocean Beach Atlantic Ocean Lifeguard Course	X	X	X
YMCA	YMCA Lifeguard		X	X
	Lifeguard		X	X

SHALLOW WATER CERTIFICATION

***Valid for shallow pools as indicated below**

	CERTIFICATION TITLE
American Red Cross (ARC)	Shallow Water Attendant (New 2007) *Valid for water depths of 4 feet or less.
American Lifeguard Association (ALA) CERTIFICATE MUST STATE THE WORDS "INSTRUCTOR-LED COURSE"	Shallow Water Lifeguard Instructor-Led Course *Valid for water depths of 4 feet or less.
Ellis & Associates Inc. International Lifeguard Training Program Separate certificate for CPR is NOT required.	Shallow Water Lifeguard *Valid for water depths of 5 feet or less.

MONROE COUNTY

Department of Health

Water Supply & Pools

John D. Doyle
County Executive

Andrew Doniger, M.D., M.P.H.
Director

MEMORANDUM

TO: WS & P Staff

FROM: John Frazer, P.E., Senior Public Health Engineer

DATE: August 24, 1998

SUBJECT: Swimming Pool Defecation Incidents

Upon learning of a defecation incident, the pool operator shall:

1. Immediately vacate the pool.
2. Remove all visible particles.
3. 'Shock' the pool to a 10 ppm free chlorine residual concentration. Apply the solution where the particles were observed.
4. Keep the pool closed for 6 hours or until the pool has had time to turn over.
5. Backwash the filters and disinfect the filter media.
6. Ensure that the pool chemistry is within allowable limits prior to opening.

H:\ephe\wsp\memo\pool defecations

Swimming Pool Disinfection Instructions

1. The swimming pool disinfectant residual must be checked at least three times (3x) a day, especially before and after periods of heavy bathing.

2. The minimum disinfectant residuals to properly disinfect a pool are stated in Section 6-1.11(c) of Subpart 6-1 of the New York State Sanitary Code. Spa disinfectant residuals are stated in Section 6-1.25(c). A summary of the chlorine/bromine residuals are as follows:

For a pH range of 7.2-7.8 (ideal pH approximately 7.5):	minimum concentration of .6 mg/l free chlorine residuals (spas - 1.5 mg/l free chlorine residual); maximum concentration of 5 mg/l free chlorine residual.
	minimum concentration of 1.5 mg/l bromine residual (spas - 3.0 mg/l); maximum concentration of 6 mg/l bromine residual.
For a pH range of 7.8 - 8.2:	minimum concentration of 1.5 mg/l free chlorine residual.

Use of chlorine compounds containing cyanuric acid is not acceptable.

Chlorine and bromide levels must be measured by the DPD method.

3. The chlorine sample should be taken between the pool inlet and outlet, at approximately a 12" depth.

4. Note in the remarks column any unusual circumstances; i.e., pump failure, reason for pump and filter not operating, testing of ground fault interrupter, if applicable, and cloudiness of pool water, etc.

5. The county or district health department must be immediately notified of any change in equipment, interruption in treatment, loss of water clarity, or serious injury.

NEW YORK STATE DEPARTMENT OF HEALTH

Fact Sheet — March 2010

Fecal Incident Response Recommendations for Pool and Spray Ground Staff*

What do you do when you find poop in the pool?

*This Fact Sheet is consistent with CDC's Healthy Swimming recommendations. For more information go to www.cdc.gov/healthywater/swimming/

- These recommendations are for responding to fecal incidents in chlorinated/brominated recreational water venues.
- Improper handling of chlorine-based disinfectants can cause injury. Follow proper occupational safety and health requirements when following these recommendations.
- **Pool/Spray Ground Closures:** Fecal incidents are a concern and an inconvenience to both pool/spray ground operators and patrons. Operators should carefully explain to patrons why the pool/spray ground needs to be closed in response to a fecal incident. Understanding that closure is necessary for proper disinfection and protection of the health and safety of patrons is likely to promote support rather than frustration. Pool/spray ground closures allow chlorine to do its job — to kill germs and help prevent recreational water illnesses (RWIs).

Important background info...

WHAT ARE RECREATIONAL WATER ILLNESSES (RWIs)?

What is the first thing that pops into your head when you think about water safety? Drowning? Slipping? Lightning? All good answers, and all are very important. But, did you know that germs can contaminate swimming water? These germs cause RWIs that have made many people sick.

RWIs are caused by germs such as "Crypto" (KRIP-toe), short for *Cryptosporidium*, *Giardia* (gee-ARE-dee-uh), *E. coli* 0157:H7, and *Shigella* (Shi-GEL-uh).

HOW ARE RWIs SPREAD?

RWIs are spread by swallowing pool or spray ground water that has been contaminated with fecal matter. How? If someone has diarrhea, that person can easily contaminate the pool/spray ground. Think about it. Pool/spray ground water is shared by every swimmer. Really, it's communal bathing water. It's not sterile. It's not drinking water.

The good news is that germs causing RWIs are killed by chlorine. However, chlorine doesn't work right away. It takes time to kill germs and some germs like Crypto can live in pools for days. Even the best maintained pools can spread illness.

SHOULD ALL FECAL INCIDENTS BE TREATED THE SAME?

No. A diarrheal fecal incident is a higher-risk event than a formed-stool incident. With most diarrheal illnesses, the number of infectious germs found in each bowel movement decreases as the diarrhea stops and the person's bowel movements return to normal. Therefore, a formed stool is probably less of a risk than a diarrheal incident that you may not see.

A formed stool may contain no germs, a few, or many that can cause illness. You won't know. The germs that may be present are less likely to be released into the pool/spray ground because they are mostly contained within the stool. However, formed stool also protects germs inside from being exposed to the chlorine in the pool/spray ground, so prompt removal is necessary.

Germ Inactivation Time for Chlorinated Water*

Germ	Time
E. coli O157:H7 Bacterium	Less than 1 minute
Hepatitis A Virus	About 16 minutes
Giardia Parasite	About 45 minutes
Crypto Parasite	About 15,300 minutes or 10.6 days†

SHOULD YOU TREAT A FORMED FECAL INCIDENT AS IF IT CONTAINS CRYPTO?

No. In 1999, pool staff volunteers from across the country collected almost 300 samples from fecal incidents that occurred at water parks and pools.¶ CDC then tested these samples for Crypto and *Giardia*. None of the sampled feces tested positive for Crypto, but *Giardia* was found in 4.4% of the samples collected. These results suggest that formed fecal incidents pose only a very small Crypto threat but should be treated as a risk for spreading other germs (such as *Giardia*). Remember a diarrheal fecal incident is considered to be a higher-risk event than a formed-stool fecal incident.

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* 1 parts per million (ppm) or mg/L free chlorine at pH 7.5 or less and a temperature of 77°F (25°C) or higher.

† Shields JM, Hill VR, Arrowood MJ, Beach MJ. Inactivation of *Cryptosporidium parvum* under chlorinated recreational water conditions. J Water Health 2008;6(3):513–20.

¶ CDC. Prevalence of Parasites in Fecal Material from Chlorinated Swimming Pools — United States, 1999. MMWR 2001;50(20):410–2.

What do I do about...

formed stool in the pool or spray ground?

Formed stools can act as a container for germs. If the fecal matter is solid, removing the feces from the pool/ spray ground without breaking it apart will limit the degree of pool/spray ground contamination. In addition, RWIs are more likely to be spread when someone who is ill with diarrhea has a fecal incident in the pool or spray ground.

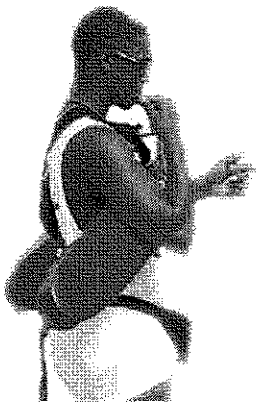
diarrhea in the pool or spray ground?

Those who swim when ill with diarrhea place other swimmers at significant risk for getting sick. Diarrheal incidents are much more likely than formed stool to contain germs. Therefore, it is important that all pool and spray ground managers stress to patrons that swimming when ill with diarrhea is an unhealthy swimming behavior.

1. **For both formed-stool and diarrheal fecal incidents,** close the pool/spray ground to swimmers. If you have multiple pools/spray grounds that use the same filtration system — all pools/spray grounds will have to be closed to swimmers. Do not allow anyone to enter the pool(s)/ spray ground(s) until the disinfection process is completed.
2. **For both formed-stool and diarrheal fecal incidents,** remove as much of the fecal material as possible (for example, using a net or bucket) and dispose of it in a sanitary manner. Clean and disinfect the item used to remove the fecal material (for example, after cleaning, leave the net or bucket immersed in the pool during disinfection).

   VACUUMING STOOL FROM THE POOL OR SPRAY GROUND IS NOT RECOMMENDED.
3. At facilities that use bromine disinfection, chlorine-based disinfectant must be used to treat contamination. Bromine cannot be distinguished from chlorine in water by most test kits. When responding to contamination in brominated systems, the minimum disinfection level needed will be a combination of the current bromine level **plus** the minimum chlorine level specified for the type of contamination.

4. Raise the free chlorine to 2 parts per million (ppm), if less than 2 ppm, and ensure pH 7.5 or less and a temperature of 77°F (25°C) or higher. This chlorine concentration was selected to keep the pool/spray ground closure time to approximately 30 minutes. Other concentrations or closure times can be used as long as the contact time (CT) inactivation value* is achieved (see next page).
5. Maintain free chlorine concentration at 2 ppm and pH 7.5 or less for at least 25 minutes before reopening the pool/spray ground. In the presence of chlorine stabilizers,[†] which are known to slow disinfection, double the disinfection contact time. Ensure that the filtration system is operating while the pool/ spray ground reaches and maintains the proper free chlorine concentration during the disinfection process.



4. If necessary, before attempting the hyperchlorination of any pool/ spray ground, consult an aquatics professional to determine the feasibility, the most optimal and practical methods, and needed safety considerations.
5. Raise the free chlorine concentration to 20 ppm[¶,§] and maintain pH 7.5 or less and a temperature at 77°F (25°C) or higher. The free chlorine and pH should remain at these levels for at least 12.75 hours to achieve the CT inactivation value of 15,300.** **Crypto CT inactivation values are based on killing 99.9% of Crypto. This level of Crypto inactivation cannot be reached in the presence of 50 ppm chlorine stabilizer, even after 24 hours at 40 ppm free chlorine, pH 6.5, and a temperature of 77°F (25° C).[††] Extrapolation of these data suggest it would take approximately 30 hours to kill 99.9% of Crypto in the presence of 50 ppm or less cyanuric acid, 40 ppm free chlorine, pH 6.5, and a temperature of 77°F (25°C) or higher.**
6. Confirm that the filtration system is operating while the water reaches, and is maintained, at the proper chlorine level for disinfection.
7. Backwash the filter or replace cartridge or DE media after reaching the CT inactivation value. Be sure the effluent is discharged directly to waste and in accordance with state or local regulations. Do not return the backwash through the filter.
8. Allow patrons back into the water only after the required CT inactivation value has been achieved and the free chlorine and pH levels have been returned to the normal operating range (0.6–5.0 ppm when pH is 7.2–7.8).

Establish a fecal incident log. Document each fecal incident by recording date and time of the event, whether it involved formed stool or diarrhea, and the free chlorine and pH levels at the time or observation of the event. Before reopening the pool/spray ground, record the free chlorine and pH levels, the procedures followed in response to the fecal incident (including the process used to increase chlorine levels if necessary), and the contact time.

* CT inactivation value refers to concentration (C) of free chlorine in ppm (or mg/L) multiplied by time (T) in minutes at a specific pH and temperature.

† Chlorine stabilizers include compounds such as cyanuric acid, dichlor, and trichlor.

¶ Many conventional test kits cannot measure free chlorine levels this high. Use chlorine test strips that can measure free chlorine in a range that includes 20–40 ppm (such as those used in the food industry) or make dilutions with chlorine-free water when using a standard DPD test kit.

§ If pool operators want to use a different free chlorine concentration or inactivation time, they need to ensure that CT inactivation values always remain the same (see next page for examples of how to accomplish this).

** Shields JM, Hill VR, Arrowood MJ, Beach MJ. Inactivation of *Cryptosporidium parvum* under chlorinated recreational water conditions. J Water Health 2008;6 (3):513–20.

†† Shields JM, Arrowood MJ, Hill VR, Beach MJ. The effect of cyanuric acid on the chlorine inactivation of *Cryptosporidium parvum*. J Water Health 2008; in press.

Pool and spray ground disinfection time...

How long does it take to disinfect a pool or spray ground after a fecal incident? This depends on what type of fecal incident has occurred and at which free chlorine levels you choose to disinfect the pool or spray ground. If the fecal incident is formed stool, follow Figure 1, which displays the specific time and free chlorine levels needed to inactivate *Giardia*. If the fecal incident is diarrhea, follow Figure 2, which displays the specific time and free chlorine levels needed to inactivate Crypto.

Figure 1 *Giardia* Inactivation Time for a Formed-Stool Fecal Incident

Free Chlorine Level (ppm)	Disinfection Time*
1.0	45 minutes
2.0	25 minutes
3.0	19 minutes

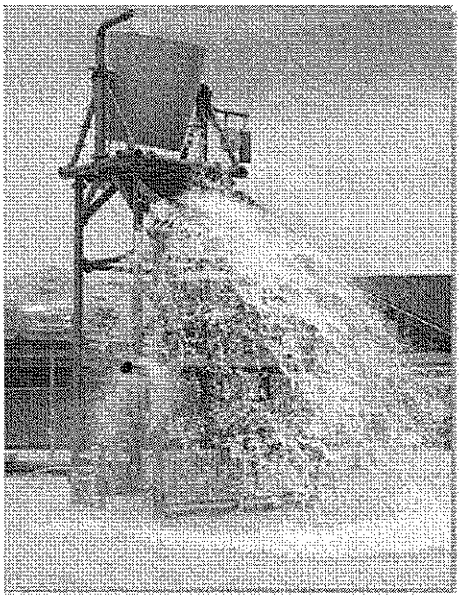
* These closure times are based on 99.9% inactivation of *Giardia* cysts by chlorine at pH 7.5 or less and a temperature of 77°F (25°C) or higher. The closure times were derived from the U.S. Environmental Protection Agency (EPA) Disinfection Profiling and Benchmarking Guidance Manual. These closure times do not take into account "dead spots" and other areas of poor pool water mixing.

Figure 2 Crypto Inactivation Time for a Diarrheal Fecal Incident

Free Chlorine Level (ppm)	Disinfection Time*†
10	1,530 minutes (25.5 hours)
20	765 minutes (12.75 hours)
40	383 minutes (6.5 hours)

* Shields JM, Hill VR, Arrowood MJ, Beach MJ. Inactivation of *Cryptosporidium parvum* under chlorinated recreational water conditions. J Water Health 2008;6(3):513–20.

† At pH 7.5 or less and a temperature of 77°F (25°C) or higher.



The **CT inactivation value** is the concentration (C) of free chlorine in ppm multiplied by time (T) in minutes (CT inactivation value = C x T). The CT inactivation value for *Giardia* is 45 and the CT inactivation value for Crypto is 15,300 (pH 7.5 or less and a temperature of 77°F [25°C] or higher). If you choose to use a different free chlorine concentration or inactivation time, you must ensure that the CT inactivation values remain the same.

For example, to determine the length of time needed to disinfect a pool after a diarrheal incident at 15 ppm, use the following formula: C x T = 15,300.

Solve for time: T = 15,300 ÷ 15 ppm = 1020 minutes or 17 hours. It would take 17 hours to inactivate Crypto at 15 ppm.

NEW YORK STATE DEPARTMENT OF HEALTH

Fact Sheet — March 2010

Vomit and Blood Contamination of Pools and Spray Grounds

Protection Against Recreational Water Illnesses (RWIs)

This Fact Sheet is consistent with CDC's Healthy Swimming recommendations. For more information go to www.cdc.gov/healthywater/swimming/.

The most common germs spread through recreational water are germs that cause diarrheal illnesses and skin rashes. These are spread by swallowing water contaminated with feces or by skin exposure to contaminated water. Coming in contact with blood in recreational water is unlikely to spread illness.

Vomit in Pool or Spray Ground Water

Vomiting while swimming appears to be a common event. Often, vomiting is a result of swallowing too much water and, therefore, the vomit is probably not infectious. However, if the full contents of the stomach is vomited, follow the guidance in these Q & As:

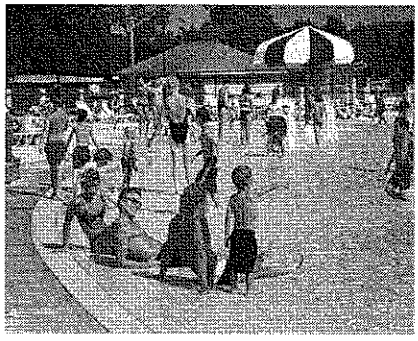
Q: **What germs are likely to be spread by vomit?**
A: Noroviruses (also known as Norwalk-like viruses).

Q: **Assuming that norovirus is in the vomit, what should I do?**
A: Respond to the vomit accident as you would respond to a formed fecal accident, using the recommendations found in the NYSDOH Fact Sheet "Fecal Incident Response Recommendations for Pool and Spray Ground Staff" (www.nyhealth.gov/environmental/outdoors/swimming). The time and chlorine level combinations needed to kill noroviruses and *Giardia* are similar. Since killing *Giardia* is the basis of CDC's formed fecal accident response recommendations, this protocol should be adequate for disinfecting a potentially infectious vomit accident.

Blood in Pool or Spray Ground Water

Germs (e.g., Hepatitis B virus or HIV) found in blood are spread when infected blood or certain body fluids get into the body and bloodstream (e.g., by sharing needles and by sexual contact). CDC is not aware of any of these germs being transmitted to swimmers from a blood spill in a pool or spray ground.

Q: **Does chlorine kill the germs in blood?**
A: Yes. These germs do not survive long when diluted into properly chlorinated recreational water.



Q: **Swimmers want something to be done after a blood spill. Should the pool or spray ground be closed for a short period of time?**
A: There is no public health reason to recommend closing the pool or spray ground after a blood spill. However, some staff choose to do so temporarily to satisfy patrons.

MATERIAL SAFETY DATA SHEET	U. S. DEPARTMENT OF LABOR	SPECIAL	NFPA HAZARD RATING	HMIS RATINGS
May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standards must be consulted For specific requirements.	Occupational Safety & Health Administration Non-Mandatory Form Form Approved OMB No. 1218-0072	A - Safety Glasses B - A + Gloves C - B + Apron D - C + Face Shield E - B + Dust Mask	F - C + Dust Mask G - B + Respirator H - F + Goggles I - B + Respirator X - Ask supervisor	4 - Extreme 3 - High 2 - Moderate 1 - Slight 0 - Insignificant	Health..... 3 Flammability....0 Reactivity..... 3 Personal Protection..... X

IDENTITY (As used on label & list)

Product Name: **CRYSTAL AQUA MURIATIC ACID** : Product Code: HYDROCHLORIC ACID

SECTION 1 Distributed by:

Manufacturer's Name
BISON LABORATORIES, INC.

: Emergency Telephone Number
: 800-424-9300 CHEMTREC

Address (Number, Street, City, State & Zip Code)
100 LESLIE STREET

: Telephone Number for information
716-895-2707

BUFFALO, NY 14211

: Date Prepared 2/17/97

Reference Number:

: Signature of Preparer (optional)

SECTION II — HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS (Specific Chemical Identity; Common Name)		OSHA PEL	ACGIH TLV	OTHER LIMITS	% (optional)
HYDROCHLORIC ACID	CAS #7647-01-0	5.00 PPM	5.00 PPM	N/E	

SECTION III - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point (F)	PROX 176°	Specific Gravity (Water = 1.0)	1.16	Lbs per Gallon Density	9.7
Vapor Pressure (mm Hg.)		pH of Concentrate:	N/E	pH Use Dilution	ACIDIC IN SOLUTION
Vapor Density (AIR = 1)		Evaporation Rate (Water = 1)			

Solubility in Water:
COMPLETE

Appearance & Odor:
COLORLESS TO SLIGHTLY YELLOW

Product Name: **CRYSTAL AQUA MURIATIC ACID** Product Code: HYDROCHLORIC ACID

SECTION IV — FIRE & EXPLOSION HAZARD DATA

Flash Point (F) (Method Used)	N/A	Flammable Limits :	LEL N/A	UEL N/A
Extinguishing Media:	DRY CHEMICAL, CARBON DIOXIDE, HALON, WATER, FOAM			
Special Fire Fighting Procedures:	NO FIRE HAZARD EXISTS DIRECTLY FROM HYDROCHLORIC ACID			
Unusual Fire & Explosion Hazards:	WHEN HYDROCHLORIC ACID COMES IN CONTACT WITH METAL, IT CAN GENERATE HYDROGEN GAS. WEAR SELF CONTAINED BREATHING APPARATUS, BOOTS AND ACID RESISTANT CLOTHING.			

SECTION V — REACTIVITY DATA :TO MAINTAIN PRODUCT INTEGRITY

Stability : Unstable	: Conditions to Avoid:	
: Stable XXX	:	OPEN CONTAINERS
Incompatibility: (Materials to Avoid)	OXIDIZING SUBSTANCES, COMMON METALS, ALKALI OR ACTIVE METAL	

Hazardous Decomposition or Byproducts: CONTACT WITH COMMON METALS PRODUCES HYDROGEN, WHICH MAY FORM EXPLOSIVE MIXTURES WITH AIR. THERMAL DECOMPOSITION MAY RELEASE CORROSIVE HYDROGEN CHLORIDE - CONTACT WITH OXIDIZERS WILL PRODUCE CHLORINE GAS.

Hazardous Polymerization	: May Occur	:
	: Will Not Occur	: XXX :

SECTION VI — HEALTH HAZARD DATA

Routes of Entry: Inhalation: YES Skin: YES Ingestion: YES Eyes: YES Other: N/E

Health Hazards (Acute & Chronic):

Inhalation	: LOW LEVEL MAY CAUSE IRRITATION AND BURNING OF THE THROAT, COUGHING AND CHOKING - CHRONIC INHALATION MAY CAUSE BRONCHITIS AND GASTRITIS.
Skin Contact	: MAY CAUSE SEVERE IRRITATION, INFLAMMATION, ULCERATION, NECROSIS AND CHEMICAL BURNS.
Ingestion	: MAY CAUSE BURNS OF THE MOUTH, THROAT, ESOPHAGUS AND STOMACH, WITH PAIN, NAUSEA, SALIVATION, VOMITING, DIARRHEA, CHILLS AND SHOCK.
Eye Contact	: CONTACT MAY CAUSE SEVERE IRRITATION, CONJUNCTIVITIS, CORNEAL NECROSIS AND BURNS.

Carcinogenicity: NO NTP? NO IARC Monographs? NO OSHA Regulated? NO

Signs & Symptoms of Exposure:

Medical Conditions Generally Aggravated by Exposure: ASTHMA, OTHER RESPIRATORY DISORDERS, SKIN ALLERGIES AND ECZEMA

Emergency First Aid Procedures:

EYE CONTACT:	IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. GET MEDICAL ATTENTION IMMEDIATELY.
SKIN CONTACT:	REMOVE CONTAMINATED CLOTHING & SHOES IMMEDIATELY. WASH AFFECTED AREA WITH SOAP AND LARGE AMOUNTS OF WATER FOR AT LEAST 15 MINUTES. IN CASE OF CHEMICAL BURNS, GET IMMEDIATE MEDICAL ATTENTION.
INHALATION:	REMOVE TO FRESH AIR. ADMINISTER OXYGEN IF BREATHING IS DIFFICULT. OF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IMMEDIATELY CONTACT PHYSICIAN.
INGESTION:	DO NOT INDUCE VOMITING. IF CONSCIOUS, GIVE LARGE AMOUNTS OF WATER. IF VOMITING OCCURS, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION. GET MEDICAL ATTENTION IMMEDIATELY.

Product Name: **CRYSTAL AQUA MURIATIC ACID** Product Code: HYDROCHLORIC ACID

SECTION VII — PRECAUTIONS FOR SAFE HANDLING & USE

Steps to Be Taken in Case Material Is Released or Spilled:
EVACUATE AREA, DENY ENTRY BY UNAUTHORIZED PERSONNEL. DO NOT BREATH VAPORS. KEEP UP WIND. WEAR ACID RESISTANT SUIT AND SELF CONTAINED BREATHING APPARATUS.

Waste Disposal Method:
DILUTE WITH WATER AND NEUTRALIZE WITH SODIUM BICARBONATE OR CRUSHED LIMESTONE OR FLAKE LIME. DISPOSAL MUST BE ACCORDING TO STATE AND FEDERAL REGULATIONS.

Precautions to Be Taken in Handling & Storage:
AMBIENT TEMPERATURE IN TIGHTLY CLOSED CONTAINER.

Other Precautions:
KEEP OUT OF REACH OF CHILDREN AND AWAY FROM FOOD PRODUCTS. KEEP CONTAINER CLOSED WHEN NOT IN USE.

SECTION VIII — CONTROL MEASURES

Respiratory Protection (Specify Type): FULL FACE NOISH/MSHA APPROVED RESPIRATOR FOR ACID GAS.

Ventilation	: Local Exhaust	MAINTAIN BELOW EXPOSURE LIMITS	: Special:
	: Mechanical (General)		: Other :
Protective Gloves	: YES. RUBBER OR NEOPRENE	: Eye Protection	: YES : SPLASH PROOF SAFETY GLASSES

Other Protective Clothing or Equipment: ACID PROOF BOOTS & CLOTHING, EYE WASH FACILITY, EMERGENCY SHOWER

Work/Hygienic Practices: WASH AFTER HANDLING OR USING PRODUCT - LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. CLEAN OR REPLACE CONTAMINATED FOOTWEAR.

PROPER SHIPPING NAME:	DOT HAZARD CLASS:	PACKAGING GROUP	ID #:
HYDROCHLORIC ACID	CORROSIVE HAZARD CLASS 8	II	UN-1789

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MATERIAL SAFETY DATA SHEET | U. S. DEPARTMENT OF LABOR | SPECIAL | NFPA HAZARD RATING | HMIS RATINGS

May be used to comply with OSHA's Hazard Communication Standard, 29 CFR 1910.1200. Standards must be consulted For specific requirements.

Occupational Safety & Health Administration Non-Mandatory Form Form Approved OMB No. 1218-0072

A - Safety Glasses
B - A + Gloves
C - B + Apron
D - C + Face Shield
E - B + Dust Mask

F - C + Dust Mask
G - B + Respirator
H - F + Goggles
I - B + Respirator
X - Ask supervisor

4 - Extreme
3 - High
2 - Moderate
1 - Slight
0 - Insignificant

Health.....3
Flammability....0
Reactivity..... 2
Personal Protection.....B

IDENTITY (As used on label & list) **CRYSTAL AQUA CHLORINATING SOLUTION** : EPA 9613-20001
Product Name: EPA - 9613-20001 EPA CHEMICAL CODE 014703 : Product Code: CHLORINATING SOLUTION

SECTION 1 Distributed by: Address:

Manufacturer's Name
BISON LABORATORIES, INC.

: Emergency Telephone Number
: 800-424-9300 CHEMTREC

Address (Number, Street, City, State & Zip Code)
100 LESLIE STREET

: Telephone Number for information
716-895-2707

BUFFALO, NY 14211

: Date Prepared 02 / 17 / 97

Reference Number: CRYSTAL AQUA

: Signature of Preparer (optional)

SECTION II — HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

HAZARDOUS COMPONENTS (Specific Chemical Identity; Common Name)	OSHA PEL	ACGIH TLV	OTHER LIMITS	% (optional)
SODIUM HYDROXIDE CAS # 1310-73-2 CAUSTIC SODA	2 MG/M3	2 MG/M3		1-2
SODIUM HYPOCHLORITE CAS # 7681-52-9 HYPOCHLOROUS ACID SODIUM SALT	N/E	N/E		12-15
WATER CAS # 7732-18-5	N/E	N/E		85-86

SECTION III -PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point (F)	: 230° F	: Specific Gravity (Water = 1.0)	: 1.2	: Lbs per Gallon : Density	:	10.3	
Vapor Pressure (mm Hg.) 20.4 MG/HG @ 20° C	:	: pH of Concentrate: @ 100 GML	12	: pH Use Dilution	:	N/E	
Vapor Density (AIR = 1)	:	: Evaporation Rate (Water = 1)	:	N/A			

Solubility in Water: 100%

Appearance & Odor: COLORLESS TO LIGHT YELLOW GREEN LIQUID WITH CHLORINE-LIKE ODOR

EPA 9613-20001

Product Name: CRYSTAL AQUA CHLORINATING SOLUTION Product Code: CHLORINATING SOLUTION

SECTION IV — FIRE & EXPLOSION HAZARD DATA

Flash Point (F) (Method Used) : N/A : Flammable Limits : LEL N/A : UEL N/A

Extinguishing Media: USE WATER SPRAY, FOG, FOAM, DRY CHEMICAL OR CARBON DIOXIDE OR AGENT FOR FIRE IN SURROUNDING AREA.

Special Fire Fighting Procedures: USE SELF-CONTAINED BREATHING APPARATUS AND FULL PROTECTIVE EQUIPMENT. ACID CONTAMINATION WILL PRODUCE VERY IRRITATING FUMES. SIMILAR TO CHLORINE.

Unusual Fire & Explosion Hazards: SODIUM HYPOCHLORITE SOLUTION DECOMPOSES WHEN HEATED. VIGOROUS REACTION POSSIBLE WITH ORGANIC MATERIALS OR OXIDIZING AGENTS AND MAY RESULT IN FIRE.

SECTION V — REACTIVITY DATA :TO MAINTAIN PRODUCT INTEGRITY

Stability	: Unstable	:	: Conditions to Avoid: DO NOT MIX OR STORE WITH ACIDS AND TO 250°F REDUCING AGENTS,
	: Stable	: XXX :	CONCENTRATED PRODUCT IS A MODERATE OXIDIZING AGENT.

Incompatibility: (Materials to Avoid) CONTAMINATION WITH HEAVY METALS, REDUCING AGENTS, ORGANICS, ETHER, AMMONIA AND ACIDS.

Hazardous Decomposition or Byproducts: If burned, normal combustion products:
MAY RELEASE CHLORINE OR IRRITATING OR ORGANO-CHLORINE GASES WHEN MIXED WITH ACID GASES OR FUMES ARE TOXIC.

Hazardous	: May Occur	:	: Conditions to Avoid: DO NOT MIX WITH ACID OR OTHER CLEANING PRODUCTS
Polymerization	:		
	: Will Not Occur	: XXX :	

SECTION VI — HEALTH HAZARD DATA

Routes of Entry: Inhalation: YES Skin: YES Ingestion: YES Eyes: YES Other: N/E

Health Hazards (Acute & Chronic): ACUTE: CORROSIVE OR SEVERELY IRRITATING TO ALL BODY TISSUES
CHRONIC: NO KNOWN HAZARD

Inhalation	: REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, HAVE TRAINED PERSON ADMINISTER OXYGEN. IF RESPIRATION STOPS, GIVE MOUTH TO MOUTH RESUSCITATION. GET IMMEDIATE MEDICAL ATTENTION.
Skin Contact	: FLUSH THOROUGHLY WITH COOL WATER UNDER SHOWER WHILE REMOVING CONTAMINATED CLOTHING & SHOES.
Ingestion	: MAY CAUSE PAIN AND INFLAMMATION OF THE MOUTH AND DIGESTIVE SYSTEM, BURNS AND PERFORATION OF THE ESOPHAGUS OR STOMACH, VOMITING, CIRCULATORY COLLAPSE, CONFUSION, DELIRIUM AND COMA.
Eye Contact	: FLUSH EYES IMMEDIATELY WITH WATER FOR 15 MINUTES, THEN SEEK IMMEDIATE MEDICAL ATTENTION. WASH EYES WITHIN 1 MINUTE TO ACHIEVE EFFECTIVENESS.

Carcinogenicity? NO NTP? NO IARC Monographs? NO OSHA Regulated? YES 311-312 CFR: 29 CFR 1910:1200

Signs & Symptoms of Exposure: AGGRAVATED BY EXPOSURE. DERMATITIS OR RELATED SKIN CONDITION UPON PROLONGED CONTACT WITH DILUTE SOLUTION. INHALATION OF SPRAY MAY AGGRAVATE RESPIRATORY DISEASE OR CONDITIONS.

Medical Conditions Generally Aggravated by Exposure: INHALATION OF SPRAY MAY AGGRAVATE RESPIRATORY DISEASE OR CONDITIONS.

Emergency First Aid Procedures:

INHALATION: IF INHALED, REMOVE TO FRESH AIR. IF BREATHING IS DIFFICULT, HAVE TRAINED PERSON ADMINISTER OXYGEN. IF RESPIRATION STOPS, GIVE MOUTH TO MOUTH RESUSCITATION. GET IMMEDIATE MEDICAL ATTENTION.

SKIN: PROMPTLY FLUSH SKIN WITH PLENTY OF WATER. REMOVE CONTAMINATED CLOTHING & FOOTWEAR. LAUNDER CONTAMINATED CLOTHING AND EITHER DISCARD SHOES OR THOROUGHLY CLEAN FOOTWEAR BEFORE REUSE. GET MEDICAL ATTENTION FOR ANY PAINFUL, RED OR INJURED SKIN CONTACT AREAS.

INGESTION: IF SWALLOWED, RINSE MOUTH WITH WATER. DILUTE BY DRINKING SEVERAL GLASSES OF WATER. DO NOT INDUCE VOMITING. GET PROMPT MEDICAL ATTENTION. NOTE-NEVER GIVE FLUIDS BY MOUTH OR INDUCE VOMITING IN AN UNCONSCIOUS PERSON.

EYES: IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. GET IMMEDIATE MEDICAL ATTENTION.

SECTION VII — PRECAUTIONS FOR SAFE HANDLING & USE

Steps to Be Taken in Case Material Is Released or Spilled:

DO NOT ALLOW SPILLED MATERIAL TO ENTER SEWERS OR STREAMS. FLUSH WITH WATER TO DILUTE AS MUCH AS POSSIBLE AND PUMP INTO POLYETHYLENE CONTAINERS FOR DISPOSAL. AVOID HEAT & CONTAMINATION WITH ACID MATERIALS. DO NOT USE COMBUSTIBLE MATERIALS SUCH AS SAWDUST TO ABSORB HYPOCHLORITE. AQUATIC TOXICITY NOT ESTABLISHED, BUT BLEACH, IF NOT DILUTED, MAY SERIOUSLY AFFECT AQUATIC LIFE.

Waste Disposal Method:

REDUCE WITH AGENTS SUCH AS BISULFITES OR FERROUS SALT SOLUTIONS. SOME HEAT WILL BE PRODUCED. KEEP ON ALKALINE SIDE & DILUTE WITH COPIOUS AMOUNTS OF WATER. MAIN END-PRODUCT IS SALT WATER. COMPLY WITH ALL APPLICABLE GOVERNMENTAL REGULATIONS.

Precautions to Be Taken in Handling & Storage:

DO NOT STORE ADJACENT TO CHEMICALS THAT MAY REACT IF SPILLAGE OCCURS. COMPLY WITH DOT REGULATIONS WHEN SHIPPED. IF CLOSED CONTAINERS BECOME HEATED, VENT TO RELEASE DECOMPOSITION PRODUCTS (MAINLY OXYGEN UNDER NORMAL DECOMPOSITION). DO NOT MIX OR CONTAMINATE WITH AMMONIA, HYDROCARBONS, ACIDS, ALCOHOLS OR ETHERS.

DO NOT REUSE CONTAINERS: PRODUCT RESIDUES MAY REMAIN IN CONTAINERS. ALL LABELED PRECAUTIONS MUST BE OBSERVED. DISPOSE OF CONTAINER IN A MANNER MEETING GOVERNMENT REGULATIONS.

PRODUCT DISPOSAL: PRODUCT SHOULD BE COMPLETELY REMOVED FROM CONTAINERS. MATERIAL THAT CANNOT BE USED OR CHEMICALLY REPROCESSED SHOULD BE DISPOSED OF IN A MANNER MEETING GOVERNMENT REGULATIONS.

Other Precautions:

SECTION 311 OF THE CLEAN WATER ACT LISTS PRODUCT AS A HAZARDOUS SUBSTANCE WHICH, IF DISCHARGED TO WATER, MAY REQUIRE IMMEDIATE RESPONSE TO MITIGATE DANGER TO PUBLIC HEALTH AND WELFARE. SPILLS OF 100 POUNDS OR MORE MUST BE REPORTED TO THE NATIONAL RESPONSE CENTER @ 1-800-424-8802.

ECOLOGICAL EFFECTS: THIS PRODUCT IS TOXIC TO FISH. DO NOT DISCHARGE INTO LAKES, STREAMS, PONDS OR PUBLIC WATERWAYS UNLESS IN ACCORDANCE WITH A NPDES PERMIT. FOR GUIDANCE, CONTACT THE REGIONAL OFFICE OF THE U.S. ENVIRONMENTAL PROTECTION AGENCY.

CONTAINER DISPOSAL: TRIPLE RINSE - OR EQUIVALENT. RECYCLE OR RECONDITION OR PUNCTURE AND DISPOSE OF IN A SANITARY LAND FILL.

EPA 9613-20001

Product Name: **CRYSTAL AQUA CHLORINATING SOLUTION** Product Code: CHLORINATING SOLUTION

SECTION VIII — CONTROL MEASURES

Respiratory Protection (Specify Type): NIOSH/MSHA APPROVED RESPIRATOR SHOULD BE USED AS A PRECAUTIONARY MEASURE WHERE AIRBORNE CONTAMINATES MAY OCCUR.

Ventilation	: Local Exhaust	YES	: Special:	
	: Mechanical (General)	PREFERRED	: Other :	

Protective Gloves	: YES - IMPERVIOUS GLOVES SUCH AS RUBBER, NEOPRENE OR VINYL.	: Eye Protection :	: YES - WEAR CHEMICAL SAFETY GOGGLES PLUS FULL FACE SHIELD

Other Protective Clothing or Equipment: WEAR IMPERVIOUS CLOTHING INCLUDING RUBBER SAFETY SHOES. EYE WASH FACILITY SHOULD BE IN CLOSE PROXIMITY.

Work/Hygienic Practices: **WASH AFTER HANDLING OR USING PRODUCT - LAUNDER CONTAMINATED CLOTHING BEFORE REUSE. CLEAN OR REPLACE CONTAMINATED FOOTWEAR.**

PROPER SHIPPING NAME:	DOT HAZARD CLASS:	PACKAGING GROUP	ID #:
HYPOCHLORITE SOLUTION CONTAINING MORE THAN 5% BUT LESS THAN 16% AVAILABLE CHLORINE	8	III	1791

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The information contained herein is provided in good faith and is believed to be correct as of the date hereof. However, Bison Laboratories, Inc. makes no representation as to the comprehensiveness or accuracy of the information. It is expected that individuals receiving the information will exercise their independent judgement in determining its appropriateness for a particular purpose. Accordingly, Bison Laboratories, Inc. will not be responsible for damages of any kind resulting from the use of or reliance upon such information. No representations, or warranties, either expressed or implied of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to the information set forth herein or to the product to which the information refers.

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