

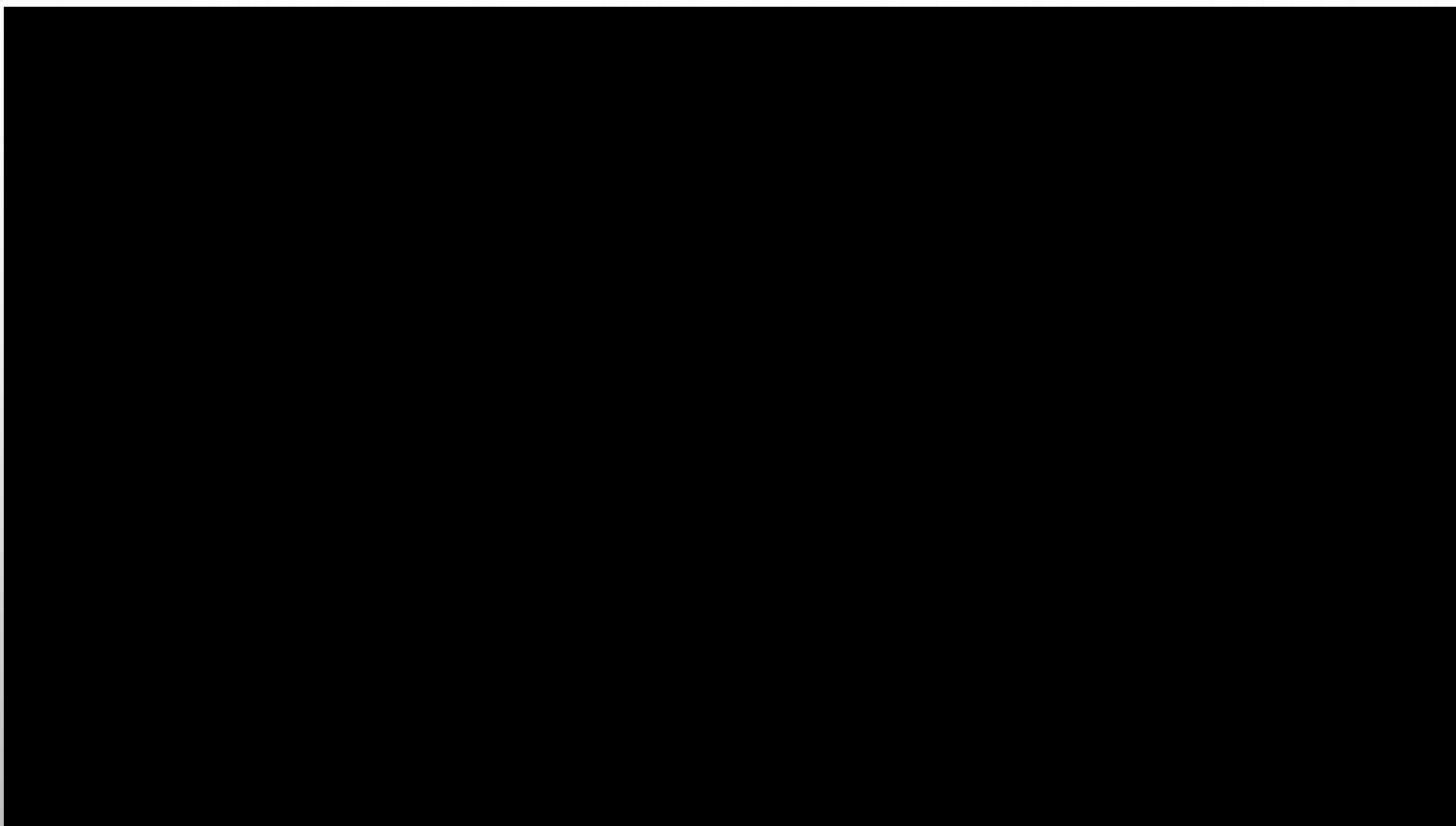
HANDLING SODIUM HYPOCHLORITE SAFELY

WASTEWATER DIVISION

Sodium Hypochlorite



Pale-yellow or greenish liquid; chlorine odor. Poison! Highly irritating to eyes/skin/respiratory tract. Also causes: cough, difficulty breathing, stomatitis, nausea, pulmonary edema; ingestion: circulatory collapse, convulsions. Strong oxidizer!





SODIUM HYPOCHLORITE LEAK PLAN



Personal
Protective
Equipment



Procedure



Decontamination
Practice

Sodium Hypochlorite is highly toxic to humans and wildlife. It is a **Category 1 health hazard** for skin corrosion, serious eye damage, and specific target organ toxicity with a single exposure. Additionally, it is corrosive to metals.

It is immensely important when handling Sodium Hypochlorite, that proper Personal Protective Equipment (PPE) is utilized.

REQUIRED PPE	ADDITIONAL DETAILS
Hand Protection	Rubber Gloves only
Protective Clothing	Apron or Full Body Chem Suit, depending on potential exposure
Eye Protection	Goggles, not glasses
Face Protection	Face Shield
Foot Protection	Rubber Boots
Ventilation	Only work with Sodium Hypochlorite in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

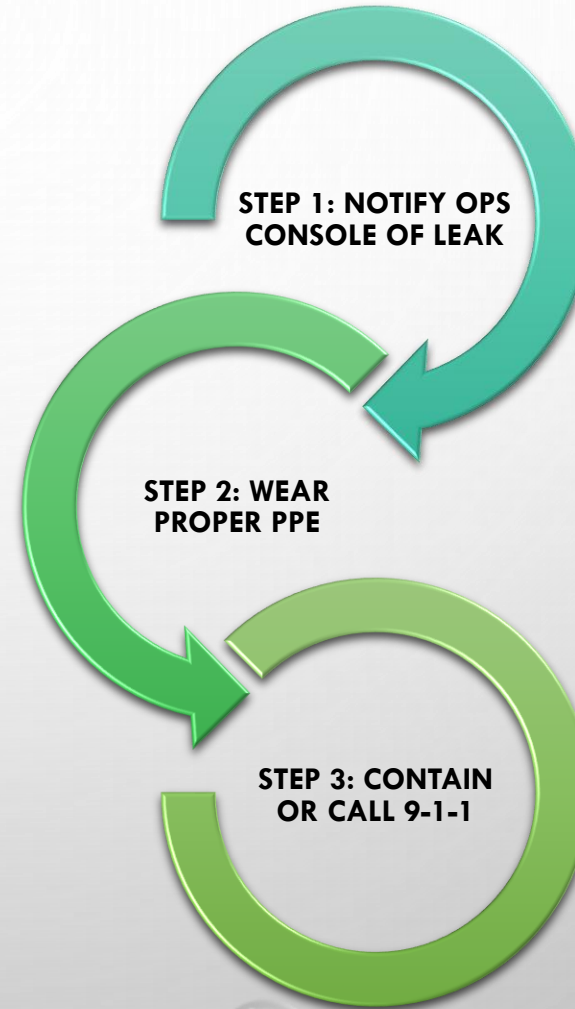


3 STEPS TO ONSITE CONTAINMENT



Do NOT attempt any clean up until you have the proper PPE on. Your health and safety are the most important thing to protect.

Most clean-up can be accomplished by using PPE and copious amounts of water to rinse chemical to drains.



**STEP 1: NOTIFY OPS
CONSOLE OF LEAK**

Be alert by monitoring and inspecting equipment to identify problems before they become major. Notify Ops Console to try to stop leaks by remote control.

**STEP 2: WEAR
PROPER PPE**

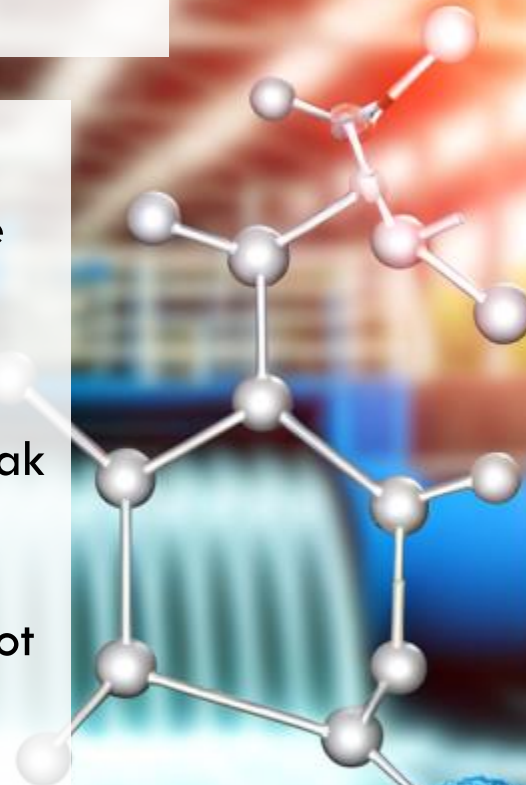
**STEP 3: CONTAIN
OR CALL 9-1-1**

For smaller spills, use spill kits to contain the spilled substance. For large spills, call 9-1-1 and ask for HAZMAT response.

OPERATIONS CONSOLE RESPONSE

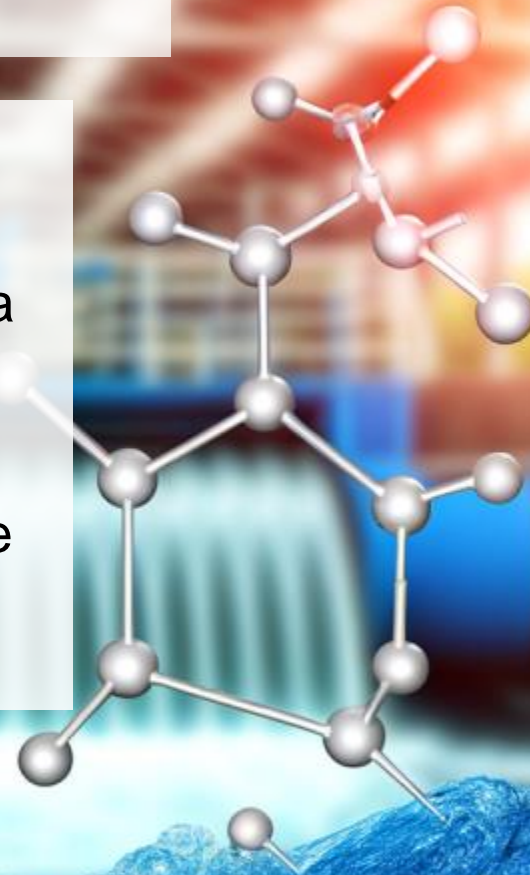
To allow for safe control of a sodium hypochlorite leak, all equipment that can be controlled from the DCS should be in remote control. Operating equipment from the DCS allows for pumps and valves to be controlled to relieve pressure from all piping without physical entry into the leak area.

Equipment that is usually operated in DCS control and cannot be operated in that mode due to an equipment problem should not be used unless necessary and a priority 5 or higher corrective maintenance or emergency maintenance work order request submitted.



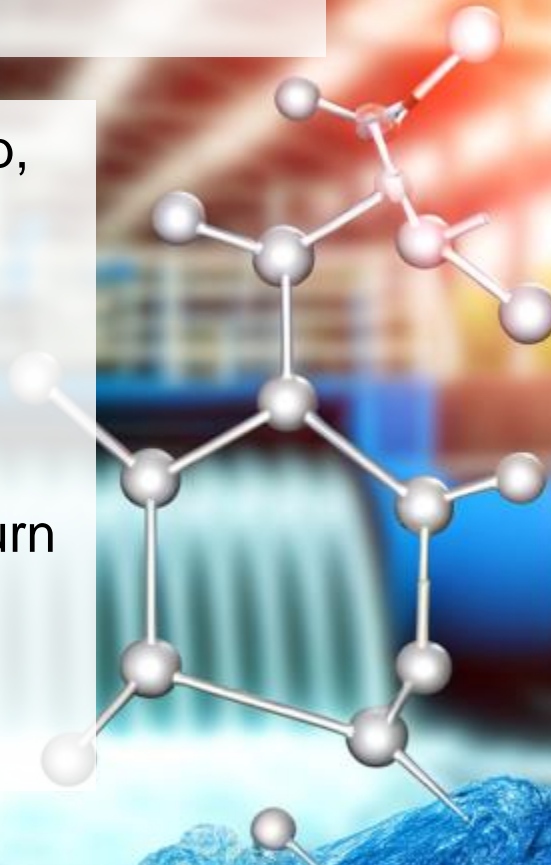
HOLDING TANK AREA

If a sodium hypochlorite leak occurs from the holding tank area, consider using the recirculation pump to draw from the leaking tank and return the product to a tank that is not leaking and has capacity to hold the product. Make sure both containment area drains to the heavy solids wet well and #4 contact chamber are closed.



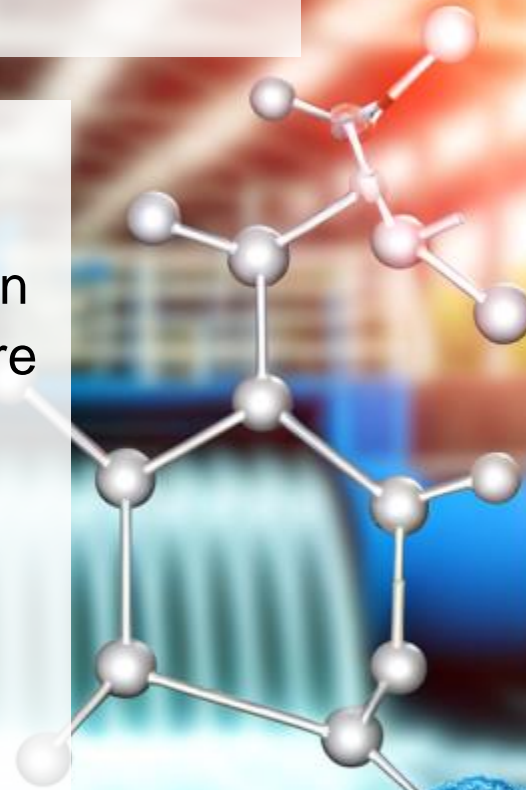
DISCHARGE OF CHEMICAL FEED PUMP

If the leak is on the discharge of chemical feed pump, from the DCS; stop the pump, stop the recirculation pump, close the feed tank inlet and return valve, let pressure causing any spray to release before using PPE and investigate source of leak. Isolate the leak and valve around to restore chemical feed. (The return line goes to the top of the hypo tank and will create head pressure over the leak point if not isolated.)



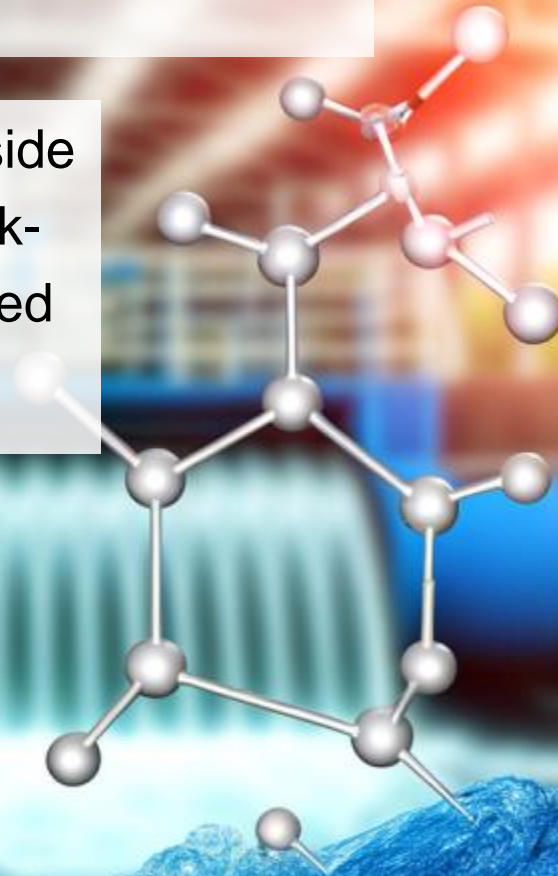
INLET SIDE OF CHEMICAL FEED PUMP

If the leak is on the inlet side of the chemical feed pump, from the DCS; stop the pump, stop the recirculation pump, close the feed tank inlet and return valve, let pressure causing any spray to release before using PPE and investigate source of leak. Isolate the leak and valve around to restore chemical feed. (The return line goes to the top of the hypo tank and will create head pressure over the leak point if not isolated.)



HYPO FEED SYSTEM OUTSIDE BUILDING

If the leak is coming from the hypo feed system outside of the building, stop the feed pump and valve to back-up line. Failure of a redundant line should be followed with a priority 5 or higher work order.




TANK CONTROL SWITCHES

If shut down of equipment and closing valves cannot be accomplished from the DCS, use the tank control switches on the east side of the containment pit to close valves. Chemical feed and recirculation pumps have breakers in the pump room in Panel 06PN52-01 on the east wall. This panel may be safe to access during a leak and allow equipment to be shutdown.

Always use locks and tags to secure the leaking components.

Notify Operations Supervisor, Plant Manager, Ops Lead or other Supervisor if there is a serious injury or potential permit violation.



**IN ALL INSTANCES WHEN
WE ARE NOT FEEDING
HYPO TO DISINFECTION
POINTS, STOP AND
CAPTURE FLOW WHENEVER
POSSIBLE.**



DECONTAMINATION PRACTICE

Operators shall be aware of emergency eyewash and shower stations as pertain to decontamination use. If sodium hypochlorite gets on your clothes or in your eyes, immediately get to an eyewash/shower station.

- Eyewash Station – Rinse your hands first to ensure no chemical is on them. Then turn use your fingers to hold your eyes open and rinse for 15 minutes, or until emergency response personnel advise you to stop. Eyewash alarm will sound at the Ops Console. Console will call 9-1-1.
- Shower – If any chemical gets on your clothes, immediately go to the shower, turn on the water, and begin rinsing. Do not remove your goggles until you are certain any chemical on your head or face has been washed away. Remove any contaminated clothing.
- Ingestion – If sodium hypochlorite is ingested, do not induce vomiting. Instead, drink water and seek medical attention immediately.



- Administration Application
- Budget and Financial Reports
- CoE CityHub
- CoE Public Site
- EMS Application
- ISC Application
- IT How To
- Laboratory Application
- Laserfiche
- Learning Management System
- Maximo
- Maximo Reports
- MSDS Online ←
- Peoplesoft for Employees
- Phone / Voicemail Settings

SAFETY DATA SHEETS


Before working with any chemical, it is the Wastewater Division practice to review the Safety Data Sheet (SDS). This not only serves as a reminder to the hazards presented by the chemical and how to handle an exposure but also means if there is an exposure that needs medical attention, the SDS is close at hand.

When seeking medical attention, always print out the SDS and present it to the medical provider.

To access Safety Data Sheets, go to the Wastewater homepage and click on the MSDS link. You can search the database using the common or scientific chemical name. Click on the Product Name of the correct chemical and then the “View PDF” button at the top of the screen.



REFERENCES

- WW 1961 SODIUM HYPOCHLORITE LEAK PROCEDURE
 - WW 1253 PERSONAL PROTECTIVE EQUIPMENT PROCEDURE
 - ANSI Z358.1 EYEWASH AND SHOWER EQUIPMENT
 - OR-OSHA ORS 437-002-0161 MEDICAL FIRST AID
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QUESTIONS?

AMY HARTSFIELD

SAFETY & EMERGENCY MANAGER