

## 1. What Happened?

There was an uncontrolled release of a small quantity of chlorine gas as a result of the inadvertent mixing of two incompatible chemicals at an Irish Water potable water pumping station facility. An electrical contractor sought to address an issue with low chlorine levels by attempting to replenish the day tank via a fill pipe located in the corner of the chlorine dosing room. It later transpired that this fill pipe, which was not labelled and which the electrical contractor assumed to be linked to a sodium hypochlorite storage tank due to its location, was in fact linked to a redundant hydrofluorosilicic acid bulk storage tank located at the rear of the pump house. The reaction which resulted from hydrofluorosilicic acid being poured on to sodium hypochlorite resulted in the release of chlorine gas.



Redundant fill pipe from disused hydrofluorosilicic acid bulk storage tank (located at the opposite side of wall)

Sodium Hypochlorite day tank

Hydrofluorosilicic acid bulk storage tank.

## 2. Immediate Actions

- All works ceased on site, Sodium hypochlorite dosing system immediately shut down and chlorine dosing room secured to prevent access.
- Gas masks donned and contaminated sodium hypochlorite day tank removed.
- Water supply to nearby reservoir shut off and system flushed
- Water in supply pipework tested and compliant chlorine and fluoride levels confirmed.
- Redundant hydrofluorosilicic acid bulk storage tanks and associated fill pipe work and equipment decommissioned and removed.

## 3. Further Actions

- All sites where fluoride dosing has been discontinued should be inspected to ensure all pipe work, tanks and equipment associated with fluoride dosing have been fully decommissioned and removed in accordance with the Code of Practice on the Fluoridation of Drinking Water, particularly where rooms or spaces have been subsequently converted into chlorine dosing rooms.
- The purpose of all pipework and equipment at treatment plants must be confirmed and clearly communicated to all personnel.
- All chemical dosing pipework must be labelled.
- Contractors should never attempt to carry out tasks outside their scope of work, particularly handling chemicals.
- SDS and chemical risk assessments must be available for all chemicals present on site.
- Ensure that all caretakers have chemical awareness training and are

# SAFETY ALERT

worksafe  
homesafe



## Inadvertent Mixing of Incompatible Chemicals

Document No: **IW-HSQE-SA-16**

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familiar with the contents of the Safety Data Sheets and Chemical Risk Assessments for the chemicals they are likely to encounter.

- All contractors must receive site specific induction prior to commencing work at Irish Water sites

## 4. Further Information

For further information on this safety alert please contact [hsqe@water.ie](mailto:hsqe@water.ie)

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### 5. Distribution list

Internal		
Asset Operations <input checked="" type="checkbox"/>	Asset Delivery <input checked="" type="checkbox"/>	Asset Strategy <input type="checkbox"/>
Asset Management <input type="checkbox"/>	All IW staff <input type="checkbox"/>	
Other Please Specify _____		

External		
Local Authority <input checked="" type="checkbox"/>	DBO <input checked="" type="checkbox"/>	Capital Contracts <input type="checkbox"/>
Relevant Framework Contractors <input checked="" type="checkbox"/>		
Other Please Specify _____		