

Chlorine Gas Release During First Fill of Hypochlorite (Chemical Suppliers)

Document No: **IW-HSQE-SA-09**

Revision: 1.00

Approved By: Claire Lyons

Effective Date: 16/08/2017

1. What Happened?

An Irish Water Chemical Supplier was delivering a first fill of Sodium Hypochlorite to an IBC storage tank on a newly installed disinfection system. Approximately 50 to 60 litres of sodium hypochlorite had been delivered when a colour change to the contents (pink/red colouration) was noted by the delivery driver and a smell of Chlorine Gas was detected in addition to activation of the smoke alarm in the chemical storage room. The site was quickly evacuated and emergency procedures enacted. Subsequent analysis by the chemical supplier determined that a side reaction had occurred; most likely due to contamination within the IBC, and that a significant quantity of chlorine gas was produced and released. It further transpired that the newly installed IBC was reconditioned and was designed for flammable rather than corrosive chemicals. A full accident investigation was carried out and the learnings applicable to Irish Water Chemical suppliers are detailed below.



2. Immediate Actions:

The site was quickly evacuated and emergency procedures enacted. The area was made safe and a full accident investigation was commenced.

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3. Further Actions:

1. Chemical suppliers are required to undertake Pre- delivery Site Inspection Reports prior to delivering chemicals to site for the first time.
2. Chemical suppliers should ensure that chemicals are only delivered in the presence of the operator and make themselves aware of site specific emergency procedures.
3. Chemical supplier should ensure that the chemical substance and volume is verified with the operator prior to commencing chemical transfer.
4. All chemical deliveries to IBCs should be carried out using cam lock fittings or a fixed fill point and not by holding a delivery hose during delivery.
5. Chemical supplier delivery drivers should ensure that they are fully satisfied with the condition of the IBC or storage tank that they are delivering to.
6. Where an IBC is in use as a storage tank, it shall be new. Reconditioned IBCs are not acceptable and the supplier shall not deliver to a reconditioned IBC. (Note: New Irish Water Facilities will not specify IBC's for long term storage purposes)
7. A verification of cleanliness certificate should be sought prior to first fill of any chemical to an Irish Water Facility.
8. All Chemical suppliers must ensure that all delivery activities are risked assessed taking into account the characteristics of each site.

4. Further Information:

For further information on this safety alert please contact hsqe@water.ie

SAFETY ALERT

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5. Distribution list

Internal		
Asset Operations <input checked="" type="checkbox"/>	Asset Delivery <input 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 type="checkbox"/>	DBO <input type="checkbox"/>	Capital Contracts <input type="checkbox"/>
Relevant Framework Contractors <input checked="" type="checkbox"/>		
Other Please Specify : _____ Chemical Framework _____		