Preparation and Disposal of Chlorine Solutions

A. PURPOSE AND SCOPE

To describe the preparation and disposal of chlorine solutions in accordance with the Principles of Water Supply Hygiene and the Technical Guidance Notes.

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C. CHANGES IN THIS DOCUMENT

DESCRIPTION OF CHANGE
Amendment to bullet point 2 in Section 1.4 regarding tablet expiry date

D. RECORDS / FORMS / LOGS

REFERENCE	TITLE	LOCATION

E. REFERENCES

REFERENCE	TITLE	LOCATION
QSC-046	Regulation 31 and 32	Intranet

F. PROCEDURE

1. Health & Safety Prerequisite

Preparation of Chlorine solution is a potentially hazardous operation.

Chlorine solutions are corrosive and may evolve toxic gases if inappropriately mixed with other chemicals. There is a risk of irritation or burns if solutions come into contact with skin or eyes and the liberation of toxic gas can cause harm to the respiratory system. Assess all activities prior to use to minimise the risk of chlorine solutions coming into contact with skin or eyes or the liberation of toxic gas.

The precautions outlined in the sections below are given as a guide to maintaining your safety & protecting your health but if you are in any doubt about the activity you are about to undertake stop and seek guidance from you Line Manager or Health and Safety representative.

1.1. Preparation

Ensure eye & hand PPE is worn when preparing solutions using 14% Sodium Hypochlorite and when handling Instachlor tablets. Hand and eye wash facilities should be readily available and easily accessible where solutions are to be prepared.

Preparation should take place in a well ventilated area and preparation out of doors is acceptable.

Chlorine solutions can be prepared from a variety of proprietary products. Only use materials which are approved under Regulation 31 and appear in the current list of approved substances published by DWI and available via QSC-046.

Use the tables below to determine the approximate volume of sodium hypochlorite solution in mls, required to make various solution strengths.

1.2. 14% Sodium Hypochlorite Solutions

Approximate Solution strength Free Cl2 mg/l	Solution Volume litres			
	1	10	100	1000
0.5	not practicable	not practicable	not practicable	3.5mls
1	not practicable	not practicable	not practicable	7mls
20	not practicable	1.5mls	14mls	143mls
50	not practicable	3.5mls	36mls	357mls
1000	7.1mls	71mls	714mls	7142mls

1.3. Instachlor PR 1000 Rapid Release Chlorine Tablets

Solution Strength Free Chlorine	Solution Volume ml	
	1000ml	100ml
1000mg/l	1 tablet	Not Practicable
10,000mg/l	10 Tablets	1 Tablet

- Discard dilute solutions regularly and store for no longer than one week.

1.4. Carriage of Tablets/Solutions

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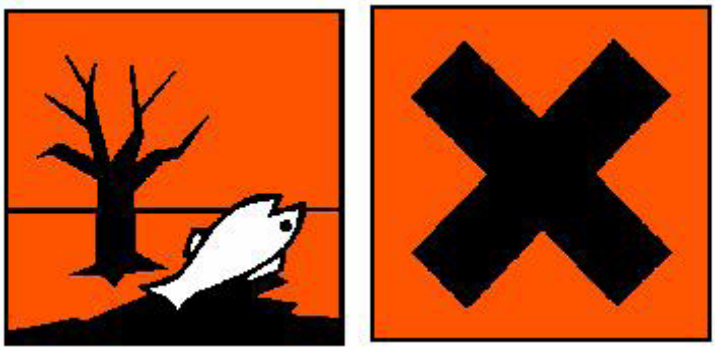
- If containers of Instachlor tablets do not have a legible ‘packed on’ date, mark them with the date received.
  When tablets are transferred from bulk containers to smaller containers in individual vans, then received date must be recorded on smaller container.

- Tablets come with a five year expiry date. Reject any tablets that have gone past their expiry date.

- All containers used for carrying chlorine solutions should be specific for hypochlorite solutions (LDPE plastic) and display appropriate Hazard warning symbols ‘Corrosive’ and 'Dangerous to the Environment'

- Instachlor tablets should be stored in the original container displaying the appropriate hazard warning symbols. (Or an alternative chemical resistant container clearly marked with 'Rapid Release Chlorine Tablets', displaying hazard warning symbols 'Harmful' and 'Dangerous to the Environment'.



- Opened containers of Instachlor tablets & chlorine solutions of less than 4% Sodium Hypochlorite are exempt from Carriage of Dangerous Goods Regulations (CDG).

- For further guidance on carriage of 14-18% Sodium Hypochlorite & multiple containers of Instachlor tablets visit http://bear/transport/live/scripts/dangerous%20goods.cfm

2. Disposal

2.1. Chlorine Solutions (> 1% Available Chlorine)

Seek advice from a Water Quality Scientist prior to the disposing of any chlorine solution of unknown strength or containing more than 1% available chlorine.

2.2. Disposal of Chlorinated Water (< 1 % Available Chlorine)

- Using sodium Thiosulphate

As a guide 18g of sodium Thiosulphate will neutralise 5mg/l chlorine per 1 cubic meter of water.

Either scatter crystals or drip a solution of sodium thiosulphate into the discharge.

Monitor discharge and adjust Thiosulphate dose to ensure no chlorinated water enters the receiving watercourse.

Seek advice from a Water Quality Scientist if more than 25 kg of sodium thiosulphate is to be used to de-chlorinate at one site in one day.

- Using Sodium Bisulphite Blocks

  Only to be used in de-chlorination bins. Follow directions on product labelling carefully as overdosing of bisulphite will result in environmental damage.

  Monitor discharge and ensure that no chlorinated water enters the receiving watercourse.