

魚缸水過濾 和消毒設施指引

Guidelines On The
Filtration And Disinfection
Facilities For
Fish Tank Water



食物環境衛生署
Food and Environmental
Hygiene Department

引言

由於霍亂弧菌可存在於海水中，因此活海鮮也是傳播霍亂的媒介，再加上天然海水的水質會因為氣候變化和污染問題而改變，在不能保證水源是絕對可靠的情況下，業界宜用人造海水飼養活海鮮。此外，裝置妥當和保養得宜的過濾和消毒設施，配合良好的管理方法，對保證魚缸水的水質，至為重要。

為保障食物安全和公眾健康，以及提高食物業魚缸海水質素，食物環境衛生署（食環署）已發出一套發牌和持牌條件及魚缸水過濾和消毒設施的指引，以供業界遵守。

如對小冊子的內容有任何疑問，可向食環署任何分區環境衛生辦事處查詢。

發牌條件

須在有關處所裝設食環署署長接受的過濾及消毒設施，把用作飼養擬供人食用的活海魚或介貝類水產動物的水過濾和消毒。

Introduction

As *Vibrio cholerae* can be found in seawater, live seafood is therefore also a medium for the transmission of cholera. The quality of natural seawater is also subject to changes of the climate and water pollution, synthetic seawater should preferably be used for keeping live seafood if it cannot be guaranteed that the source of seawater is absolutely safe. Moreover, a properly installed and well-maintained filtration and disinfection system, along with an effective management approach, is of utmost importance for ensuring the quality of fish tank water.

To safeguard food safety and public health, the Food and Environmental Hygiene Department (FEHD) has issued a set of licensing requirement and condition, and a set of guidelines on the filtration and disinfection facilities for fish tank water for compliance by the trade.

For clarification about the content of this pamphlet, please enquire at any District Office (Environmental Hygiene) of FEHD.

Licensing Requirement

Filtration and disinfection facilities acceptable to the Director of Food and Environmental Hygiene shall be installed at the premises for filtering and disinfecting water used for keeping

持牌條件

用作飼養擬供人食用的活海魚或介貝類水產動物的水，必須經過食環署署長接受的過濾及消毒設施過濾和消毒，而這些設施須經常保持性能良好。

提高業界魚缸水質素的最佳做法：

透過下列做法可提高魚缸水的質素：

- (一)可靠的海水來源；
- (二)有效的過濾及消毒系統；及
- (三)良好的保養及管理系統。

詳細內容如下：

(一) 可靠的海水來源 天然海水

1. 不應從有問題的源頭，抽取海水作飼養活海鮮之用。
2. 由2010年8月1日開始，法例禁止任何人抽取、供應、交付或使用指明禁區內的海水在食物業的運作中飼養擬供人食用的活魚或介貝類水產動物。

live marine fish or shellfish intended for human consumption.

Licensing Condition

Water used for keeping live marine fish or shellfish intended for human consumption shall be filtered and disinfected by filtration and disinfection facilities acceptable to the Director of Food and Environmental Hygiene and the facilities shall be maintained in good working order at all times.

Best Practices to Enhance Fish Tank Seawater Quality for Food Business

The quality of fish tank seawater can be enhanced by :

- (I) Reliable source of seawater,
- (II) Effective filtration and disinfection system; and
- (III) Proper maintenance and management system.

Details are as follows:

(I) Reliable Source of Seawater

Natural Seawater

1. Seawater from doubtful sources should not be used for keeping live seafood.
2. With effect from 1 August 2010, the law forbids any person to extract,

地圖說明 Legend



禁止抽取海水的地區
Prohibited Areas for
Extracting Seawater

- * 在海岸線的高水位與低水位之間，並且從低水位起計朝海50米之內
Between the high water level and the low water level of the shoreline, and within 50 m seaward from the low water level of the shoreline



禁止抽取海水的避風塘

Typhoon shelters forbidden for extraction of seawater

- | | | | |
|---|---|---|---|
| 1 香港仔南避風塘
Aberdeen South Typhoon Shelter | 5 喜靈洲避風塘
Hei Ling Chau Typhoon Shelter | 9 三家村避風塘
Sam Ka Tsuen Typhoon Shelter | 13 屯門避風塘
Tuen Mun Typhoon Shelter |
| 2 香港仔西避風塘
Aberdeen West Typhoon Shelter | 6 觀塘避風塘
Kwun Tong Typhoon Shelter | 10 筲箕灣避風塘
Shau Kei Wan Typhoon Shelter | 14 鹽田仔避風塘
Yim Tin Tsai Typhoon Shelter |
| 3 銅鑼灣避風塘
Causeway Bay Typhoon Shelter | 7 新油麻地避風塘
New Yau Ma Tei Typhoon Shelter | 11 船灣避風塘
Shuen Wan Typhoon Shelter | |
| 4 長洲避風塘
Cheung Chau Typhoon Shelter | 8 藍巴勒海峽避風塘
Rambler Channel Typhoon Shelter | 12 土瓜灣避風塘
To Kwa Wan Typhoon Shelter | |



3. 禁止抽取海水的地區包括：維多利亞港、香港島(包括鴨脷洲)沿岸地區、新界西(包括青衣)沿岸地區及《商船(本地船隻)(避風塘)規例》中所指明的14個避風塘。

supply, deliver or use seawater from specified prohibited areas for keeping live fish or shell fish for human consumption in the course of food business.

3. Prohibited areas for extracting seawater include Victoria Harbour, the shoreline of Hong Kong Island (including Ap Lei Chau), the shoreline of New Territories West (including Tsing Yi) and the 14 typhoon shelters specified in the Merchant Shipping (Local Vessels) (Typhoon Shelters) Regulation.

4. 避免在惡劣天氣期間或其後抽取海水作飼養活海鮮之用。
5. 應從可靠的供應商獲取海水。
6. 每批新到的天然海水宜貯存於設有有效的過濾和消毒系統的空魚缸內，並且在飼養活海鮮前，讓系統開動至少一至兩小時。
4. Abstraction of seawater for keeping live seafood should be avoided during and after inclement weather.
5. Seawater should be sourced from reliable supplier.
6. New batch of natural seawater should preferably be stored in an empty tank fitted with an effective filtration and disinfection system. The system should be run for at least one to two hours before being used for keeping live seafood.

人造海水

7. 使用海鹽和自來水調配人造海水。
8. 應從可靠的供應商購買海鹽製造人造海水。
9. 自來水中自由餘氯含量會隨時間減少。把鹽加進水裏，或整夜把水曝氣，都能有效把餘氯含量下降至極低水平。
10. 使用海鹽的指引，例如鹽和水的比例等，一般都印在海鹽的包裝袋上，應予遵從。
7. Synthetic seawater is prepared from marine salt and tap water.
8. The marine salts used for the preparation of synthetic seawater should be sourced from reliable suppliers.
9. Free residual chlorine level in tap water decreases with time. Addition of salt and aerating the water overnight effectively reduce residual chlorine to a very low level.
10. The instructions for the use of marine salts such as the proportion of salt and water to be used are usually printed on the marine salt packages and should be followed.

(二) 有效的過濾及消毒系統

1. 過濾/消毒系統須為封閉式循環系統，才能不斷發揮過濾和消毒作用。所採用的系統應24小時運作。
2. 魚缸水應先流經過濾設施，才流入消毒設施，兩項設施的安裝位置不可倒轉，這樣才能清除魚缸水中的懸浮固體或微粒，避免影響消毒設施的效能。

(II) Effective Filtration and Disinfection System

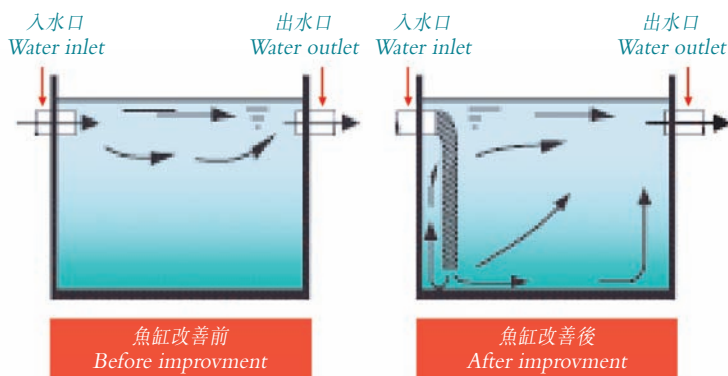
1. The filtration / disinfection system should be a closed loop system capable of providing continuous filtration and disinfection action. The system used should be operated round the clock.
2. The filtration system should be installed upstream of the disinfection system and not vice versa such that it can remove suspended solids or particulate matters in the fish tank water which may affect the efficacy of the disinfection system.



3. 水泵應符合一小時循環最少兩次的流量。
 4. 水泵流量須比過濾/消毒系統的最高流量小。
 5. 減少水流短路的機會，以加強消毒效能。
 6. 應由一家專門向海鮮業提供水質處理服務的公司/供應商，妥善安裝魚缸水的過濾和消毒設施，並由該公司/供應商定期維修保養。現時最常用的魚缸水消毒方法是紫
3. The pump should be able to circulate water at least twice in an hour.
 4. The flow rate of pump should not exceed the maximum flow rate of filtration / disinfection system.
 5. Short-circuit of water current should be avoided so as to enhance the effect of disinfection.
 6. The filtration and disinfection facilities for fish tank water should be properly installed and regularly maintained by a company/supplier



加強消毒效能，
減少水流短路機會
To enhance effect
of disinfection,
please avoid short-circuit
of water current





衛生督察定期抽取魚缸水樣本化驗

Health inspectors collect fish tank water samples for examinations regularly

外線輻射，其他方法包括臭氧消毒法、銅/銀電離化法，以及使用紫外線輻射及二氧化鈦的光催化技術。

7. 食環署會經常檢討魚缸水的消毒方法，並會把一份獲接納的魚缸水消毒方法及指引的最新資料存放在食環署各分區辦事處，供公眾索閱。市民亦可於食環署網頁 <http://www.fehd.gov.hk> 瀏覽以上資料。如經營者擬採用其他消毒方法，則須先行向食環署申請，申請書應附連建議消毒系統的詳情。除非建議的消毒系統已獲接納，否則不應安裝系統，為飼養

specialising in water treatment for live seafood. At present, UV radiation is the most common method used for disinfection of fish tank water. Other methods used are ozone, copper-silver ionization and photocatalytic oxidation technology with the use of UV radiation and titanium dioxide.

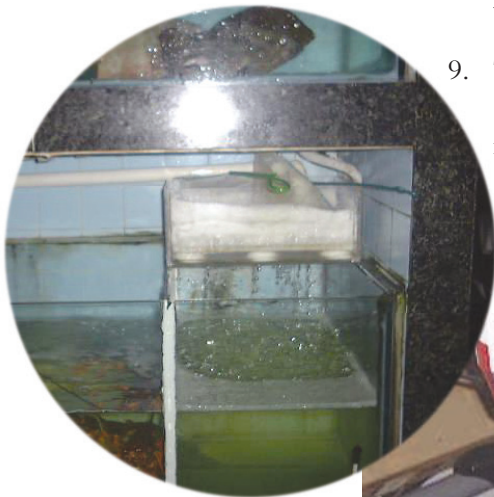
7. FEHD reviews the disinfection methods from time to time. An updated list of the accepted methods and guidance note are kept at the district offices of FEHD and FEHD webpage (<http://www.fehd.gov.hk>) for public reference. A copy of the guidance note specific for each of the methods can be obtained at these offices upon request. If an

供食用活海鮮的魚缸水消毒。

8. 經營者應指派一名員工，專責整個系統的清洗和維修保養工作。
9. 過濾物料應至少每星期清潔一次，以及至少每月補充一次。

operator intends to use a method other than those on the list, he/she should apply to FEHD with full particulars of the proposed system. Before it is accepted, the proposed system should not be installed for disinfection of the water of the fish tanks used for keeping live seafood intended for human consumption.

8. The operators should assign dedicated staff to take care of the cleansing and maintenance of the whole system.
9. The filter materials should be cleansed at least once a week and replenished at least once a month.



海綿過濾器
Spongy filter

沙粒過濾器
Sand filters



10. 如使用海綿過濾器，應更頻密地清潔和補充過濾物料。此外，如缸內的水質變差及/或所飼養的活魚數目較多，亦應更頻密地清潔和補充過濾物料。
 11. 假如使用沙粒過濾器，必須定期以反沖方法清洗沙粒，直至污水變得清澈為止。過濾器在運作一段長時間後，便須補充沙粒。
 12. 如使用活性炭過濾器，應定期檢查保養。
 13. 如情況許可，宜使用包括粗沙和幼沙作為過濾物料的層沙過濾器，而過濾器應設有自動反沖的潔淨裝置。
 14. 普遍消毒系統有下列四種：
 - 1) 紫外線輻射消毒系統；
 - 2) 臭氧消毒系統；
 - 3) 銅/銀電離化消毒系統；及
 - 4) 使用紫外線輻射及二氧化鈦的光催化技術消毒系統
10. If spongy filter is used, more regular cleansing and replenishment of the filter materials should be carried out. In addition, more regular cleansing and replenishment of filter materials should be conducted if the water quality is poor and/or fish stock density is high.
 11. If sand filters are used, they must be cleansed periodically by backwash. Backwash should be carried out until the effluent is clear. After a long running time, the sand should be replenished.
 12. If activated carbon filter is used, it should be regularly maintained.
 13. If circumstances permit, use of layered multi-sand filter comprising both coarse sand and fine sand as filter materials fitted with automatic backwash self-cleansing device is desirable.
 14. In general, there are four types of disinfection system as follows:
 - 1) UV radiation disinfection system;
 - 2) Ozone system;
 - 3) Copper-silver ionization disinfection system; and
 - 4) Disinfection system employing photocatalytic oxidation technology with the use of UV radiation and titanium dioxide.

當中技術指引如下：

1) 紫外線輻射消毒系統指引

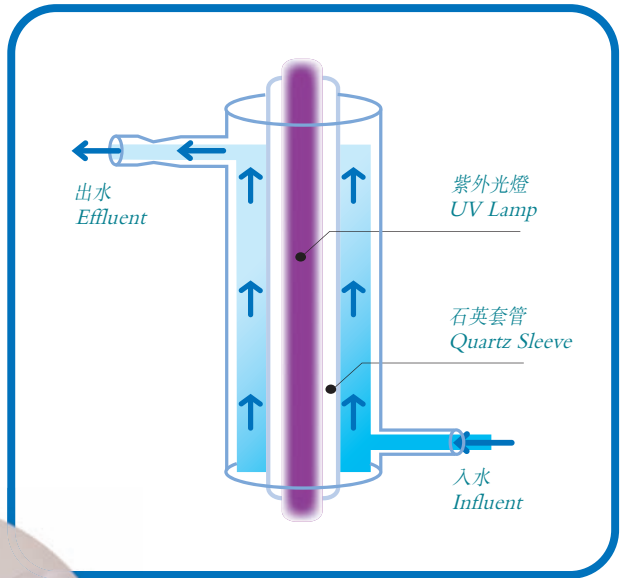
- i) 所採用的紫外光燈必須能夠釋放出紫外線C波段（介乎280納米與100納米之間），而最高輸出波長應為254納米。宜採用雙筒式光管及較強光度的紫外光燈。
- ii) 紫外光燈應完全密封，以免任何人受到紫外線輻射影響。
- iii) 一般紫外光燈壽命不超過12個月，由於紫外光燈會老化而逐漸失效，因此應定期更換紫外光燈，宜每隔六至九個月或跟隨製造商指引更換一次，不可等到紫外光燈自然耗盡時才更換。
- iv) 應由系統供應商或曾受訓練的人員至少每月清潔紫外光燈的石英套管一次。
- v) 應由系統供應商或曾受訓練的人員定期檢查保養，宜至少每隔六個月檢查一次。

The guidance notes are as follows:

1) Guidance Note for UV Radiation Disinfection System

- i) The UV lamp used should be operating at the wavelength of UVC range (i.e. 280-100 nanometer) with peak effect at 254 nanometer. The use of a double barrel UV lamp tube and higher lamp intensity is preferred.
- ii) The UV lamp should be sealed completely to avoid human exposure to the UV radiation.
- iii) The shelf life of UV lamp is normally less than 12 months. As the output of UV lamp declines over time, the UV lamp should be replaced preferably at 6 to 9 months interval before burns out naturally .
- iv) The quartz sleeve of the UV lamp should be cleansed at least monthly by trained personnel of the operator or the system supplier.
- v) The system should be regularly maintained by trained personnel of the operator or the UV lamp supplier preferably at least once every 6 months.
- vi) Since the efficacy of the disinfection system is also affected by water circulation time, the water in the

紫外線輻射消毒系統 UV Radiation Disinfection System



取出紫外光燈的石英套管
Taking out UV lamp's quartz sleeve
for cleansing



清潔紫外光燈的石英套管
Cleansing of UV lamp's quartz sleeve

vi) 由於消毒系統的效能亦受水的循環時間影響，系統中的水應至少每小時循環兩次，即每30分鐘流經過濾和消毒系統一次，以便有效減低魚缸內的細菌含量。(以一個600升的魚缸為例，流經過濾和消毒系統的流速應為每分鐘20升，整個系統的水循環時間才能達致30分鐘。)

vii) 經營者應與供應商磋商，確保安裝的紫外線消毒系統符合設計規格和能夠發揮最大的消毒作用。

2) 臭氧消毒系統指引

i) 臭氧消毒系統須由承造商按特定需求設計，才能發揮最大消毒效用。在安裝系統前，必須進行測試，並調校好臭氧濃度，以確保用作消毒的臭氧濃度適中。

system should recycle at least two times per hour, i.e. water passes through the filtration and disinfection system once every 30 minutes, in order to effectively reduce the bacterial load in fish tank. (For example, for a 600-litre fish tank, the water flow rate through the filtration and disinfection system should be 20 litres/min in order to achieve an overall cycling time of 30 minutes for the whole system.)

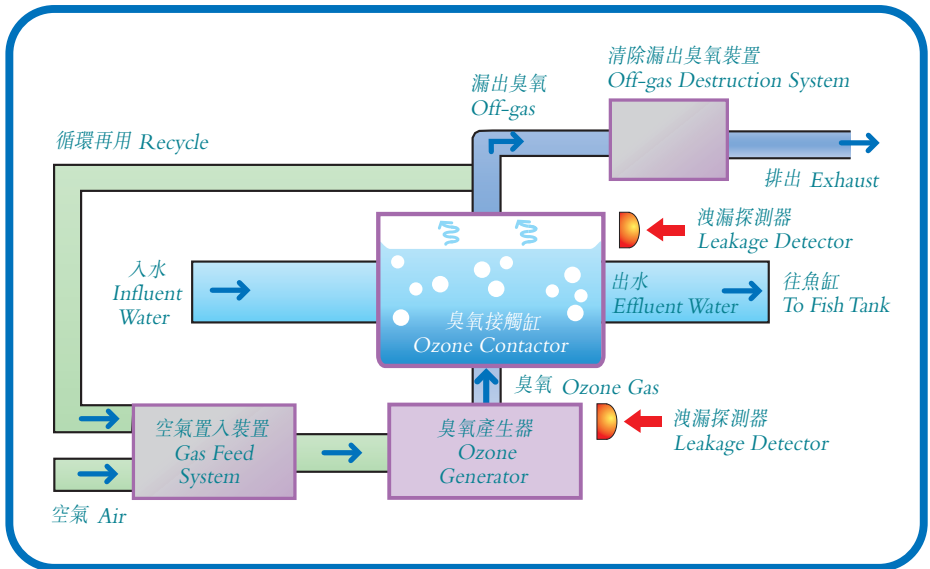
vii) The operator should work with the supplier to ensure the system in place meet the design specifications with a view to achieving optimal disinfection efficacy.

2) Guidance Note for Ozone System

i) For optimal disinfection efficacy, tailor-made systems by contractors are necessary. The system should be pilot-tested and calibrated prior to installation to ensure that they are able to produce optimal ozone concentration for disinfection.

ii) Regular maintenance of the system equipment should be carried out by trained personnel or the system supplier preferably at quarterly intervals. The ozone source must be switched off during the cleansing and maintenance operations.

臭氧消毒系統 The Ozone System



- ii) 系統的設備應由曾受訓練人員或系統供應商定期維修保養，宜每季一次。清潔和維修保養系統時，必須關上臭氧產生器。
- iii) 臭氧消毒系統應能監察四周的臭氧水平，並設有關閉設備和警報器，於四周臭氧水平超過百萬分之0.1時自行啟動。假如實際情況難以安裝清除漏出臭氧的裝置，便應把臭氧產生器和臭氧接觸缸安裝在空氣流通的地方，
- iii) Ambient ozone levels should be monitored and equipment shutdown and alarm device should be incorporated into the system and operating automatically when levels exceed 0.1 ppm. If there are practical difficulties for installation of the off-gas destructor, the ozone generator and the contact tank should be installed in a well ventilated area fitted with ozone leakage detector with automatic alarm and equipment shutdown device. Users should take note of the potential hazard of improperly operated ozone system.

並且裝上了附有自動警報器和關閉設備的臭氧洩漏探測器。使用者須注意不正確操作臭氧系統是可能產生危險的。

- iv) 假如使用紫外線輻射來產生臭氧，應定期更換所使用的紫外光燈，宜每隔六至九個月更換一次，不可等用到紫外光燈自然耗盡時才更換。
- v) 臭氧消毒系統應設有臭氧接觸缸，以容許臭氧有充分時間在接觸缸內溶於水中，這樣的消毒系統才能發揮最大效用，同時亦不會影響人和魚類的健康。臭氧接觸缸應妥善蓋好。不應把臭氧不斷直接輸入魚缸，因為直接接觸臭氧可損害魚類健康，而洩漏臭氧也會危及周圍的人的健康。此外，亦應避免把臭氧直接輸入設有過濾設施的魚缸，因為這會減低過濾和消毒作用。
- vi) 經營者應要求臭氧消毒系統供應商確保所安裝的系統符合設計規格，以發揮最大的消毒作用。

- iv) If UV radiation is used to generate ozone, the UV lamp should be regularly replaced preferably at 6 to 9 months interval, but well before it burns out naturally.
- v) For optimal disinfection efficacy, human safety and health of the fish, the system should be installed with an ozone contact tank where ozonation is done inside the tank with sufficient contact time. The ozone contact tank should be well covered. Continuous introduction of ozone directly to the fish tank is not recommended as the direct contact of ozone can be harmful to fish and the release of ozone off-gas can be hazardous to humans in the vicinity. Direct introduction of ozone into the tank containing the filtration facilities should also be avoided as it would adversely affect the filtration and disinfection efficacy.
- vi) The operators should require the supplier to ensure that the system in place meet the design specification with a view to achieving optimal disinfection efficacy.

3) 銅/銀電離化消毒系統指引

- i) 經營者應要求供應商確保所安裝的系統符合設計規格，以發揮最大的消毒作用。宜每兩星期量度魚缸水的殘餘離子數量一次。



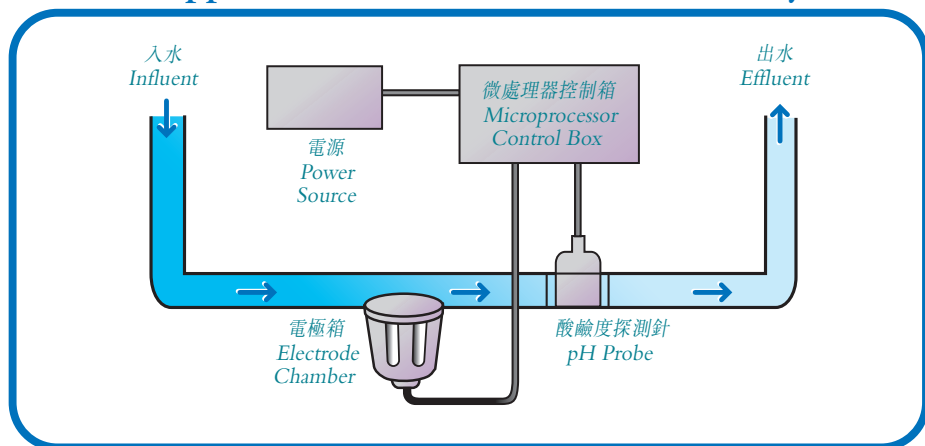
量度魚缸水的殘餘離子數量
Measuring residual ions level
in the fish tank water

3) Guidance Note for Copper-silver Ionization Disinfection System

- i) The operators should require the suppliers to ensure that the system in place meets the design specifications with a view to achieving optimal disinfection efficacy. Measurement of residual ions levels in the fish tank water should be carried out preferably at bi-weekly interval.
- ii) The operators should consult the supplier of the system on the dosage of copper / silver ions to be used to ensure its effectiveness while not producing any undesirable side effects to the live seafood.

銅/銀電離化消毒系統

The Copper-silver Ionisation Disinfection System



- ii) 經營者應就銅／銀離子的使用量，徵詢系統供應商的意見，以確保系統的消毒效能，同時不會對活海鮮有不良影響。
- iii) 經營者宜每天監測魚缸水的酸鹼值，確保酸鹼值介乎7.2與7.8之間，以達致最佳的消毒效果。
- iv) 電離化消毒的電極宜每年更換一次。
- v) 應由曾受訓練的人員或系統供應商定期檢查保養系統，宜每季一次。

4) 使用紫外線輻射及二氧化鈦的光催化技術消毒系統指引

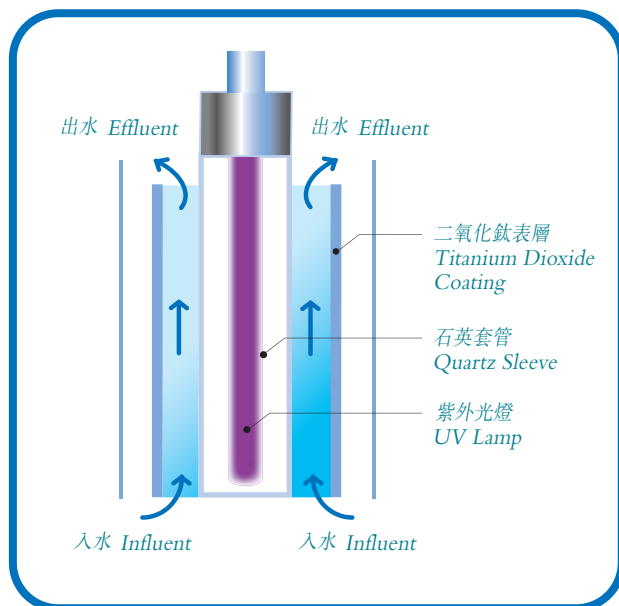
- i) 所採用的紫外光燈必須能夠釋放出有效激發光催化反應的紫外線波段。
- ii) 紫外光燈應完全密封，以免任何人受到紫外線輻射影響。
- iii) 由於紫外光燈會日漸老化而逐漸失效，因此應定期更換紫外光燈，宜每隔六至九個月更換一次，不可等到紫外光燈自然耗盡時才更換。

- iii) The operators should monitor the pH value of the fish tank water preferably on daily basis to ensure that the pH is within the range of 7.2 to 7.8 for optimal disinfection.
- iv) The electrodes of the ionizer should preferably be replaced at yearly interval.
- v) Regular maintenance of the system should be carried out by trained personnel or the system supplier preferably at quarterly interval.

4) Guidance Note for Disinfection System employing Photocatalytic Oxidation Technology with the use of UV Radiation and Titanium Dioxide

- i) The UV lamp used should be operating at the wavelength that is effective to trigger the photocatalytic oxidation reaction.
- ii) The UV lamp should be sealed completely to avoid human exposure to the UV radiation.
- iii) As the output of UV lamp declines over time, the UV lamp should be replaced preferably at 6 to 9 months interval, before it burns out naturally.
- iv) The quartz sleeve of the UV lamp should be cleansed at least monthly by trained personnel of the operator or the system supplier.

使用紫外線輻射及二氧化鈦的
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The Disinfection System
Employing Photocatalytic Oxidation
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- iv) 應由系統供應商或曾受訓練的人員至少每月清潔紫外光燈的石英套管一次。
- v) The photocatalyst should be regenerated or replaced by the system supplier preferably at least once yearly.
- v) 應由系統供應商定期更新或更換光催化劑，宜至少每年進行一次。
- vi) The system should be maintained by trained personnel of the operator or the system supplier preferably at quarterly intervals.



活魚及介貝類水產動物應分開放置在不同的魚缸內飼養

Live fish and shellfish should be kept separately in different fish tanks

vi) 應由系統供應商定期檢查保養整個系統，宜至少每隔三個月檢查一次。

vii) 經營者應要求供應商確保安裝的系統符合設計規格，以發揮最大的消毒作用。

vii) The operator should require the supplier to ensure the system in place meet the design specifications with a view to achieving optimal disinfection efficacy.

(III) Proper Maintenance and Management System

(三) 良好的保養及管理系統

1) 須保留過濾/消毒系統流程圖，並記錄系統的技術資料，如水泵、過濾系統、殺菌系統的型號、流量等資料。如有改裝，必須更新有關資料，以便維修保養及令員工易於跟進。

2) 製定清潔維修時間表，並指派員工，跟據時間表專責執行整個系統的清洗和維修保養工作。

1) The flow diagram of the filtration / disinfection system should be maintained. Technical information of the system such as model and flow rate of pump and filtration / disinfection system should be record. Information of any modification of the system should be updated to facilitate staff in follow up and maintenance of the system.

2) A cleansing programme should be designed and dedicated staff should be assigned to follow the time schedule in carrying out cleansing and maintenance of the whole system.

- 3) 應把活魚及介貝類水產動物分開放置在不同的魚缸內飼養，而在每個魚缸所飼養的活魚或介貝類水產數目不宜太多，以免過分擁擠。飼養活魚、甲殼類及介貝類水產的魚缸，宜使用不同的過濾和消毒系統。應用清水徹底洗淨及除去活生雙殼軟體動物的泥，才放入魚缸。
- 4) 須定期擦洗和徹底潔淨魚缸內壁，宜至少每星期一次。鋪置於缸內的沙石和其他裝飾物亦須以同樣方法清潔。擦洗及清潔後，須把缸內的水全部倒去，並把魚缸及其內的沙石沖洗乾淨，才重新注入合乎衛生標準的海水。
- 5) 每次潔淨魚缸時，須將供應水和空氣至魚缸的所有喉管徹底清潔，並用清水沖洗。定期妥善和徹底清洗整套裝置，對保持魚缸水的水質十分重要。
- 6) 魚缸四周的地方須保持清潔及空氣流通，亦不能有結構上的缺陷。
- 3) Live fish and shellfish should be kept separately in different tanks and at a stock density not causing overcrowding. It is preferable to use separate sets of filtration and disinfection systems for tanks used for keeping live fish, crustaceans and shellfish. Live bivalve mollusks should be washed free of mud with clean water before being kept in the storage tank.
- 4) All the internal surfaces of the fish tanks should be scrubbed and thoroughly cleansed regularly, preferably at least once a week. Sand, stones and other objects laid inside the fish tanks for decoration purposes should also be cleansed in the like manner. After scrubbing and cleansing, all water in the fish tanks should be drained off. The fish tanks including the sand and stones inside should be rinsed clean before refilling of the wholesome seawater.
- 5) All pipes for the supply of water and air to fish tanks should be thoroughly cleansed and rinsed with clean water during cleansing of fish tanks each time. Proper and thorough cleansing of the whole set-up at regular intervals are important in upkeeping the quality of tank water.

- 7) 接觸到魚缸水的魚網及其他物品應保持潔淨。魚網用完後，應存放在清潔的專用盛載桶內。營業時間過後，魚網及其盛載桶均應徹底潔淨，並以清水沖洗。
 - 8) 接觸魚缸時，應戴上乾淨的膠手套。
 - 9) 長期未經使用的魚缸和其他連接魚缸的物件必須徹底清洗，才可再次使用。
 - 10) 定期更換魚缸水能有效清除由活魚/介貝類水產動物產生的有害物質，亦可避免因魚缸水混濁而令消毒系統的效能下降。
 - 11) 海水供應商或海鮮批發商可自行定期為海水取樣，並交由認可的實驗室作分析及保存其測試報告，以了解水質狀況及作為海水質素的憑證。
 - 12) 記錄獲取天然海水水量或海鹽和自來水調配的人造海水水量，最好能保留單據，方便擬定採購計劃及以便供查考及管理。
- 6) The fish tank area should be clean, well ventilated and free from any building defect.
 - 7) Fish net and other articles in contact with the fish tank water should always be kept clean. If not in use, the fish net should be stored in a clean bucket specially for the purpose. After business hours, fish net and the buckets should be cleansed thoroughly and rinsed with clean water.
 - 8) When handling fish tanks, clean rubber gloves should be worn.
 - 9) Fish tanks and other connected articles left unused for a period of time should be cleansed thoroughly before they are used again.
 - 10) Periodic changing of tank water is an effective means to remove harmful substances produced by the stock after a period of time. Periodic changing of water will also prevent turbid water from decreasing the efficacy of disinfection systems.
 - 11) Seawater supplier or seafood wholesaler can take sample of seawater to recognized laboratory for analysis and keep the test reports so as to monitor the quality of seawater.

- 13) 所有採用“維修飼養活海魚及/或介貝類水產動物的水的過濾及消毒設備記錄”表格記錄的維修保養資料須由專責員工/承辦商填妥及核證，並存放在處所至少一年。這些資料包括檢查及清潔過濾/消毒系統、更換和補充濾水介質、更換紫外光燈泡/光管等詳情。有關記錄應時刻備妥，以便衛生督察隨時提出要求時可出示，以供查閱及複製。“維修飼養活海魚及/或介貝類水產動物的水的過濾及消毒設備記錄”表格可從食環署網頁下載，網址是 <http://www.fehd.gov.hk>。
- 12) The quantity of natural seawater or synthetic seawater prepared from marine salt and tap water should be recorded. Purchase invoices should be kept for purchase plan and monitoring purpose.
- 13) All records using the form “Maintenance Record on Filtration and Disinfection Facilities for Water for Keeping Live marine Fish and/or Shellfish” to register the maintenance details, including the checking and cleansing work carried out to the systems, replacement and addition of the filter medium, replacement of the UV-light bulbs/tubes, etc. should be completed and certified by the dedicated staff/contractor. The records should be kept on the premises for at least one year. They should be readily available for inspection and for reproduction should the Health Inspector demand for them at all times. The form “Maintenance Record on Filtration and Disinfection Facilities for Water for Keeping Live marine Fish and/or Shellfish” can be downloaded from the website of FEHD: <http://www.fehd.gov.hk>.

