



# INTERNATIONAL SHIP CLASSIFICATION PTE LTD

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## CIRCULAR

To : All Offices  
From : General Manager  
ISClass  
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### RE: MARPOL ANNEX VI (AIR POLLUTION)

The circular provides the procedures and details for conducting survey and issuance of IAPP or Certificate of Compliance under MARPOL Annex VI

1. Terminology
  - a. "New Ship" means a ship whose keel is laid, or which is at a similar stage of construction, on or after 19 May 2005.
  - b. "Existing ship" means a ship which is not a new ship

2. Application  
All ships of 400 GRT or above shall be subjected to surveys irrespective of their year of construction, service area or kind. However the Administration may allow reduction of a part of inspection for ships solely engaged in domestic services.

Initial surveys for new ships shall be completed at delivery

Initial survey for existing ships shall be completed no later than the completion date of first scheduled drydocking after 19 May 2005 but no later than 3 years after 19 May 2005.

3. Issuance of Certificates  
An IAPP shall only be issued after the Flag Administration has ratified the Convention

A Certificate of Compliance shall be issued to ships of Flag Administration when no ratification has been done to the Convention.

4. Survey

- (1) Ozone depleting substances

New installations which contain ozone depleting substances shall be prohibited on or after 19 May 2005, except that new installations containing HCFCs are permitted until 1 January 2020. Systems or equipment etc. containing ozone depleting substances that are installed before 19 May 2005 can remain installed. In addition, repair or recharge of already installed systems or equipments etc. is permitted.

Installation conditions of ozone depleting substances' onboard ships will be checked at Initial survey. The kind, quantity, location and installation date of ozone depleting substances will be confirmed according to the name plates of systems or equipment etc.

Systems or equipment etc. containing ozone depleting substances that were installed before 19 May 2005 can remain installed. In addition, repair or recharge of already installed systems or equipments etc. is permitted



"Ozone depleting substances" defined in ANNEX VI originated in Annexes A, B, C and E to the Montreal Protocol 1987, and the production of them had already been prohibited sequentially after adoption of the Protocol. Therefore, at the present time, new installations may basically be in compliance with ANNEX VI.

For your information, the basic uses of ozone depleting substances are shown below and the kinds of ozone depleting substances are listed in Appendix A.

- (i) Halons: Fire extinguishers etc.
- (ii) CFCs: Refrigerant for refrigerators, freezers or air-conditioners
- (iii) HCFCs: Refrigerant for refrigerators, freezers or air-conditioners
- (iv) HBFCs: Fire extinguishers etc.

(2) Nitrogen oxides (NO<sub>x</sub>)

Diesel engines (excluding engines to be used solely in case of emergency ) with a power output of more than 130kW which are installed on a ship constructed on or after 1 January 2000, or which undergo a major conversion on or after 1 January 2000 are subjected to Surveys. Basically, every engine shall have its NO<sub>x</sub> emissions measured and pre-certified, and an EIAPP Certificate or a Statement of Compliance "STATEMENT OF COMPLIANCE FOR ENGINE AIR POLLUTION PREVENTION" shall be issued to the engine before the engine is installed on board a ship. In cases where on-board diesel engines do not have an EIAPP Certificate nor the Statement of Compliance, please confirm with the engine manufacturer and contact Head Office immediately

At Initial survey, it is to be confirmed that the EIAPP Certificate (or Statement of Compliance) and Technical file are retained on board ships, and it is also to be confirmed that the NO<sub>x</sub> emissions remain within the limits (on-board NO<sub>x</sub> verification), in accordance with the procedures described in the approved manufacturer's file, after adjustment of injection timing etc. which are generally conducted on board ships.

For on-board NO<sub>x</sub> verification, engine parameter check method and simplified measurement method etc. are available. In the parameter check method, the Engine parameter record book which contains records of change or adjustment of NO<sub>x</sub> critical components is to be checked and confirmation of serial number of actual components etc. is to be carried out.

(3) Sulphur oxides (SO<sub>x</sub>)

For any bunkering on or after 19 May 2005, the sulphur content of fuel oil is required not to exceed 4.5% m/m.

It is to be confirmed from the bunker delivery note that the sulphur content of fuel oil is within the limit, and is also to be ensured that bunker delivery notes and the corresponding fuel oil samples (more than 400ml) are retained on board ships for more than 3 years and for more than 12 months respectively. For your information, guidelines for sampling and storage of fuel oil are provided in IMO MEPC Resolution 96(47).

While ships are within designated SO<sub>x</sub> Emission Control Areas, it is required that the sulphur content of any fuel oil used on board ships shall not exceed 1.5% m/m, or otherwise an SO<sub>x</sub> reducing device must be applied to reduce the total emission of sulphur oxides from the ship to 6.0g/kWh or less. In the former case, installations for fuel oil changeover and a log-book by which fuel oil changeover prior to entry into a SO<sub>x</sub> Emission Control Area can be proven are required. At the present time, the Baltic Sea area (application starts on 19 May 2006) and North Sea area (application is scheduled to start on November 2007) are designated as SO<sub>x</sub> Emission Control Areas by IMO.



Bunker delivery notes are to be written in English, French or Spanish and shall contain the following items:

- (i) Name and IMO Number of the receiving ship
- (ii) Port
- (iii) Date of commencement of delivery
- (iv) Name, address and telephone number of the fuel oil supplier
- (v) Product name(s)
- (vi) Quantity in metric tons
- (vii) Density at 15°C (kg/m<sup>3</sup>) derived from the test in accordance with ISO 3675
- (viii) Sulphur content (% by mass) derived from the test in accordance with ISO 8754
- (ix) A declaration signed and certified by the fuel oil supplier's representative that the fuel oil supplied is in conformity with requirements of ANNEX VI.  
Bottles of fuel oil sample are to be sealed and the following information shall be labelled on them.
- (x) Location at which, and the method by which, the sample was drawn (ii) Date of commencement of delivery
- (xi) Name of the bunker tanker/ bunker installation (iv) Name and IMO Number of the receiving ship
- (xii) Signatures and name of the supplier's representative and the ship's representative
- (xiii) [Details of sea] identification
- (xiv) Bunker grade

- (4) Volatile organic compounds (VOCs)  
Any emission of VOCs from tankers at designated ports or terminals under the jurisdiction of a contracting party is prohibited by ANNEX VI.

At the present time, no port or terminal is designated as a place where VOCs are regulated. In the case where a port or a terminal is designated, the controls comes into effect 6 months after the designation and the ports or terminals may accept existing tankers which are not fitted with vapour collecting system.

In cases where a vapour collection system is equipped, plan review is to be carried out to confirm that the system is in accordance with the provisions of IMO MSC/Circ. 585, and it is to be ensured that the system is in good working order. In addition, it is to be confirmed that the operation manual is retained on board ships.

- (5) Shipboard incinerator  
Incinerators installed on or after 1 January 2000 are required to comply with IMO MEPC Resolution 76(40). The following items are to be confirmed for the relevant incinerators:
  - (i) Confirmation of Type approval certificate etc.
  - (ii) Certificate issued by any of the IACS members and flag states can be accepted.
  - (iii) Confirmation of Product verification
  - (iv) Test record prepared by the manufacturer should be confirmed. In cases where such certificates or test records are not available on board, the confirmation/tests of items (1) through (6) listed in the Appendix B should be carried out.
  - (v) Confirmation of Installation examination
  - (vi) An installation examination certificate issued by this Society, Flag State and any members of the IACS should be confirmed. It should be confirmed that the incinerator is in good order and the items (1) through (3) listed in the attached table are satisfactory.
  - (vii) In cases where such a certificate is not available on board, the confirmation/tests of items (1) through (6) listed in the attached table should be carried out.
  - (viii) Confirmation of documents
  - (ix) A complete set of instructions and maintenance manual with drawings, electric diagram, spare lists, etc., should be confirmed.



- (x) A Manufacturer's certificate that an incinerator has been constructed in accordance with IMO MEPC Resolution 76(40) should be confirmed (by letter, certificate, or instruction manual).

5. Certificates and other documents which are to be prepared at Initial survey

It is to be ensured that the following Certificates etc. are retained on board the ship, and are appropriate.

- (1) Bunker delivery notes (for any bunkering on or after 19 May 2005)
- (2) ELAPP Certificate or equivalent Statement of Compliance (when the requirements for NO<sub>x</sub> are applied)
- (3) Technical file (when the requirements for NO<sub>x</sub> are applied)
- (4) Record book of engine parameters (when the requirements for NO<sub>x</sub> are applied and Parameter check method is adopted)
- (5) Log book (when the requirements for fuel oil with the sulphur contents of less than 1.5% m/m are applied)
- (6) Operation manual for vapour collection system (when the requirements for VOCs are applied)
- (7) Operation manual for shipboard incinerator (when the requirements for onboard incinerator are applied)
- (8) Type approval certificate etc. for shipboard incinerator (when the requirements for onboard incinerator are applied)
- (9) Manufacturer's certificate that an incinerator has been constructed in accordance with IMO MEPC Resolution 76(40) (when the requirements for onboard incinerator are applied)
- (10) Product verification certificate for shipboard incinerator (if available)
- (11) Installation examination certificate for shipboard incinerator (if available)

**Appendix A**

**Kinds of Ozone Depleting Substances**

iGnd	Refrigerant No.	Substance Name	
Halons		Halon-1211 Halon-1301 Halon-2402	BmnoGhlomdtfluoromethane Bmmobifluoromethane Dibromotetmfluoromethane
CFCs Chlomfluorocarbons	R11 R12 R113 R114 R115 R13  R500 R501 R502 R503 R505 R506	CFC-11 CFC-12 CFC-113 CFC-114 CFC-115 CFC-13 CFC-111 CFC-112 CFC-211 CFC-212 CFC-213 CFC-214 CFC-215 CFC-216 CFC-217 CFC12/HFC13 (40.1159.9) HCFC22/CFC12 (75/25) HCFC22/CFC15 (48.8151.2) HFC23/CFC13 (40.1159.9) CFC12/HCFC31 (78/22) HCFC31/CFC114 (55.1144.9)	THchlorofluoromethane Dichlorodifluoromethane Tdchlorotrifluoroethane DiGhlorctatmfluoroethane Chlompentafluoroethane Chlomtrifluoromethane Pentachlomfluormthane tetmchlorodifluoroethane Heptachlorofluoropropane Hexachlorodifluompropane Pentachlorotrifluoropropane Tetrachlorotetrafluompropane THchloropentafluoropropane Dichlorohexafluoropropane Chloroheptafluoropropene <i>Mixed (ratio)</i> <i>Mixed (ratio)</i> <i>Mixed (ratio)</i> <i>Mixed (ratio)</i> <i>Mixed (ratio)</i> <i>Mixed (M60)</i>
HCFCs Hydn~Chlomffuorccarl bons	R22  R123 R124	HCFC-21 HCFC-22  HCFC-31 HCFC-121 HCFC-122 HCFC-123 HCFC-124 HCFC-131 HCFC-132 HCFC-133 HCFC-141 HCFC-142 HCFC-151 HCFC-221 HCF~C-222	Dichloromonofluoromethane Chlomdifluoromethane  Chlomfluommethane Tetrachlorodifluomethane Tdchlorodifluoroethane Dichlorotrifluoroethane Chlorotetrafluoroethane Trichlorofluoroethane Dichlorodifluoroethane Chlorotdfluoroethane Dichlorofluoroethane Chlorodifluormthane Chlomfluoroethane Hexachlorofluoropmpane Pentachlorodifluompropane

**Kinds of Ozone Depleting Substances**

Kind	Refrigerant No.	Substanm Name	
HCFCs Hyd~Chlorofiuorwarbo ns		HCFC-223 Tetrachlorotnfluoropropane	
		HCFC-224 Tdchlorotetrafluoropropane	
		HCFC-225 Dichlompentafluompropane	
		HCFC-226 Chlorohexafluoropropane	
		HCFC-231 Pentachlorofluoropropane	
		HCFC-232 Tetrachlorodifluoropropane	
		HCFC-233 Tdchlorotrifluoropropane	
		HCFC-234 Dichloroteti-afluoropropane	
		HCFC-235 Chloropentafluompropane	
		HCFC-241 Tetrachlorofluoropropane	
		HCFC-242 Trichlomclifluoropropane	
		HCFC-243 Dichlomtdfluoropropane	
		HCFC-244 Chlorotetrafluompropane	
		HCFC-251 Trichlorofluoropropane	
		HCFC-252 Dichlowdifluoropropane	
		HCFC-253 Chlorotilfluompropane	
		HCFC-261 Dichlorofluoropropane	
		HCFC-262 Chlorodifluoropropane	
		HCFC-271 Chlorofluoropropane	
	R401A	HCFC22/HFC152a/HCFC124 (53113134)	<i>Mixed (mtio)</i>
	R402A	HCF125/HC290/HCFC22 (60/2/38)	<i>Mixed (MUO)</i>
	R403A	HC290/HCFC22/FC218 (5175120)	<i>Mixed (mtio)</i>
	R405A	HCFC22/HFC152a/HCFC142b/FCC318 (451715.5142.5)	<i>Mixed (mtio)</i>
R406A	HCFC22/HC600a/HCFC142b (55/4/41)	<i>Mixed (iratio)</i>	
R408A	HFC125/HFC143a/HCFC22 (7146147)	<i>Mixed (inatic)</i>	
R409A	HCFC221HCFC124/HCFC142b (60/25/15)	<i>Mixed (ftto)</i>	
R411A	HC1270/HCFC22/HFC152a (1.5/87.5/11)	<i>Mixed (mfio)</i>	
R412A	HCFC22/FC218/HCFC142b (70/5125)	<i>Mixed (mtio)</i>	
R509A	HCFC22/FC2i8 (44/56)	<i>Mixed (mtio)</i>	
HBFCs Hydr~Brvmofluormarbo ns	HBFC-22BI	Dibromofluoromethane	
		Bromodifluoromethane	
		Bromofluommethane	
		Tetmbromofluoroethane	
		Tribromodifluoroethane	
		Dibromotrifluoroethane	
		Bmmotetrafluoroethane	
		Tribromofluoroethane	
		Dibromodifluoroethane	
		Bmmothfluoroethane	

**Kinds of Ozone Depleting Substances**

Kind	Refrigerant No.	Substance Name
HBFCs Hydro- Bromolluorocarbons		Dibromolluoroethane Bromodifluoroethane  Bromolluoroethane Hexabromolluoropropane Pentabromodifluoropropane Tetrabromotrifluoropropane, Tribromotetrafluoropropane Dibromopentafluoropropane Bromhexafluoropropane Pentabromofluoropropane Tetrabromodifluoropropane Tribromotrifluoropropane Dibromotetrafluoropropane Bmmopentafluoropropane Tetrabromolluoropropane Tribromodifluoropropane Dibromotrifluoropropane Bmmotetrafluoropropane Tribromofluoropropane Dibromodifluoropropane Bromotrifluoropropane Dibromofluoropropane Bromodifluoropropane Bromolluoropropane
(Others)		Carbon Tetrachloride 1,1,1-trichloroethane Bromochloromethane Methyl Bromide



**Appendix B**

**Confirmation/Test items r Shipboard Incinerator**

Confirmation/Tests	Test methods
(1) External examination (2) Emergency stop switch (3) Drip tray	
(4) Operation test	
- Flame safeguard	Simulate flame failure and miss-ignition.
- Limit controls	1. Oil pressure limit control Reduce fuel oil pressure (Applies where pressure is important for the combustion process or a pump is not an integral part of burner.) 2. Others Operate the devices including other interlocking devices
- Combustion controls	Operate the incinerator using the combustion controls.
- Programming controls	Operate the incinerator using the programming controls and measure the prepurge, ignition, postpurge and time of modulation with a stop watch.
- Fuel supply controls	Operate two series fuel control solenoid valves by simulation.
(5) Low voltage test	Reduce the supply voltage to incinerator.
(6) Switches	Operate all switches.

Samples of the Certificate of Compliance and the Supplement are attached for your information. It is for those ships whose keels are laid before 19 May 2005. All surveyors are requested to send a sample of their IAPP or Certificate of Compliance to the Head Office for review prior to releasing to the owner. Please note that under Tokyo MOU, it is detainable for the absence of IAPP ( Certificate of Compliance ), EIPP or Technical File. We are still awaiting the IMO guideline to PSC on this Annex VI. This Office will keep you posted on this matter.





## **Attachment 1**

**INTERIM**

**CERTIFICATE OF COMPLIANCE**

**IN ACCORDANCE WITH THE REQUIREMENTS OF ANNEX VI TO THE INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS, 1973, AS MODIFIED BY THE PROTOCOL OF 1978 RELATING THERETO (MARPOL 73/78)**

(This Certificate shall be supplemented by a Record of Construction and Equipment)

Issued under the provisions of the Protocol of 1997 to amend the International Convention for the Prevention of Pollution from Ships, 1973, as modified of the Protocol of 1978 related thereto (herein referred to as "the Convention") under the authority of the Government of

XXXXXXXX

by INTERNATIONAL SHIP CLASSIFICATION

**SHIP'S PARTICULARS**

Name of Ship	Distinctive Number or Letters	IMO Number	Port of Registry	Gross Tonnage
XXXX	XXX	XXXXX	XXXX	XXX

Type of Ship :      Tanker  
                            Ships other than a tanker

**THIS IS TO CERTIFY :**

- (1) That the ship has been surveyed in accordance with Regulation 5 of Annex VI of the Convention; and
- (2) That the survey shows that the equipment, systems, fittings, arrangements and materials fully comply with the applicable requirements of Annex VI of the Convention.

This certificate is valid until ( 5 months from the last date of survey )

Issued at \_\_\_\_\_ on the \_\_\_\_\_

Pending issuance of final certificate

Expiry date of final certificate: ( same date as the IOPP )

.....  
**Signature, name & stamp of the duly authorised official issuing the certificate**



## **Attachment 2**

**SUPPLEMENT TO THE INTERIM CERTIFICATE OF COMPLIANCE / INTERNATIONAL AIR POLLUTION PREVENTION CERTIFICATE (IAPP CERTIFICATE)**

**RECORD OF CONSTRUCTION AND EQUIPMENT**

in respect of the provisions of Annex VI of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (hereinafter referred to as "the Convention").

**Notes:**

1. This Record shall be permanently attached to the IAPP Certificate. The IAPP Certificate shall be available on board the ship at all times.
2. If the language of the original Record is not English, French or Spanish, the text shall include a translation into one of these languages.
3. Entries in boxes shall be made by inserting either a cross (x) for the answers "yes" and "applicable" or a dash (-) for the answers "no" and "not applicable" as appropriate.
4. Unless otherwise stated, regulations mentioned in this Record refer to regulations of Annex VI of the Convention and resolutions or circulars refer to those adopted by the International Maritime Organization.

**1 SHIP'S PARTICULARS**

1.1 Name of Ship	1.2 Distinctive Number or Letters	1.3 IMO Number	1.4 Port of Registry	1.5 Gross Tonnage
XXXXXX	XXXXX	XXXXX	XXXXX	XXXX

- 1.6 Date on which keel was laid or ship was at a similar stage of construction XXXXXX
- 1.7 Date of commencement of major engine conversion (if applicable) (regulation 13) ----

**2 CONTROL OF EMISSIONS FROM SHIPS**

**2.1 Ozone-depleting substances (regulation 12)**

- 2.1.1 The following fire-extinguishing systems and equipment containing halons may continue in service : ----

System Equipment	Location on board

- 2.1.2 The following systems and equipment containing CFCs may continue in service ----

System Equipment	Location on board

2.1.3 The following systems containing hydro-chlorofluorocarbons (HCFCs) installed before 1 January 2020 may continue in service

System Equipment	Location on board
Central Air Condition unit	Air Condition Room
Independent Air Condition Unit	Engine Room
Provision refrigerating plant	Cold Room and Upper Deck

**2.2 Nitrogen oxides (NO<sub>x</sub>) (regulation 13)**

2.2.1 The following diesel engines with power output greater than 130kW and installed on a ship constructed on or after 1 January 2000, comply with the emission standards of regulation 13 (3)(a) in accordance with the NO<sub>x</sub> Technical Code

Manufacturer and model	Serial Number	Use	Power output (kW)	Rated speed (rpm)

2.2.2 The following diesel engines with power output greater than 130kW and which underwent major conversion per regulation 13(2) on or after 1 January 2000, comply with the emission standards of regulation 13 (3)(a) in accordance with the NO<sub>x</sub> Technical Code

Manufacturer and model	Serial Number	Use	Power output (kW)	Rated speed (rpm)

2.2.3 The following diesel engines with power output greater than 130kW and installed on a ship constructed on or after 1 January 2000, or with power output greater than 130kW and which underwent major conversion per regulation 13(2) on or after 1 January 2000 are fitted with an exhaust gas cleaning system or other equivalent methods in accordance with regulation 13 (3) and the NO<sub>x</sub> Technical Code

Manufacturer and model	Serial Number	Use	Power output (kW)	Rated speed (rpm)

**2.3 Sulphur oxides (SO<sub>x</sub>) (regulation 14)**

2.3.1 When the ship operates within an SO<sub>x</sub> emission control area specified in regulation 14(3) the ship uses :

- 1. Fuel oil with a sulphur content that does not exceed 1.5%*m/m* as documented by bunker delivery notes or
- 2. an approved exhaust gas cleaning system to reduce SO<sub>x</sub> emissions below 6.0g SO<sub>x</sub>/kW h : or
- 3. other approved technology to reduce SO<sub>x</sub> emissions below 6.0g SO<sub>x</sub>/kW h

**2.4 Volatile organic compounds (VOCs) (Regulation 15)**

2.4.1 The tanker has a vapour collection system installed and approved in accordance with MSC/Circ.585  ---

2.5 The ship has an incinerator :

2.5.1 Which complies with resolution MEPC.76(40) as amended  ----

2.5.2 Installed before 1 January 2000 which does not comply with resolution MEPC.76(40) as amended  X

THIS IS TO CERTIFY that this Record is correct in all respects.

Issued at xxxxxx on xxxxxx

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**Signature, name and stamp of authorized official issuing the certificate**