



MARITIME AND PORT AUTHORITY OF SINGAPORE

PORT MARINE CIRCULAR
NO. 12 OF 2023

27 October 2023

Bunker Suppliers / Bunker Craft Owners and Operators
Bunker Surveyors
Harbour Craft Community
Shipping Community

DIGITAL BUNKERING

This circular serve to inform the community that digital bunkering¹ will commence in the Port of Singapore from 1st November 2023.

2 From 1st November 2023, bunker suppliers can start issuing electronic bunker delivery note (eBDN)² and bunkering documentation required under the Singapore Standard (SS 648 – Code of practice for bunker mass flow metering) through the digital bunkering solutions whitelisted by MPA. Please refer to **Annex A** for a sample eBDN issued in Singapore (for illustration purposes only).

3 MPA has whitelisted the digital bunkering solutions to ensure conformance to bunkering standards, cybersecurity, baseline functionality, risk management and regulatory reporting requirements. The list of whitelisted³ solutions is published on MPA website ([link](#)) and will be progressively updated as new digital bunkering solutions become available.

¹ This involves the use of electronic bunkering processes and documentation, such as electronic bunker delivery notes (e-BDNs) and automatic sharing of bunkering-related information with MPA.

² MEPC 80, approved a Unified Interpretation (UI) to regulations 18.5 and 18.6 of MARPOL Annex VI promulgated via MEPC.1/Circ.795/Rev.8. This makes clear that the Bunker Delivery Note (BDN) required by regulation 18.5 is acceptable in either hard copy or electronic format provided it contains at least the information specified in appendix V to MARPOL Annex VI and is retained and made available on board in accordance with regulation 18.6. In addition, an electronic BDN should be protected from edits, modifications or revisions and authentication be possible by a verification method such as a tracking number, watermark, date and time stamp, QR code, GPS coordinates or other verification methods.

³ MPA shall not be responsible or liable for any expenses, losses or damages incurred by, or action taken against, the user(s) of whitelisted solution(s). Users, including bunker suppliers, bunker craft operators, surveyors and bunker buyers, are required to conduct its own due diligence before adopting any whitelisted solution(s).

4 MPA will require all bunkering operations in Singapore to go digital (i.e., use electronic processes and documentation) after this initial period, which will be announced at a later date. As such all MPA licenced bunker suppliers and craft operators are strongly encouraged to adopt digital bunkering at the earliest possible, for the familiarisation of the cargo officers and crew. Please see **Annex B** which provides the guidelines for the use of digital bunkering service for the bunker supplier, bunker craft operator and the vessel receiving bunkers.

5 The adoption of digital bunkering will increase efficiency of bunkering operations in the Port of Singapore. The MPA will continue to explore and work with the industry on other enhancements, including automating the data flow from Mass Flow Meters.

6 Should you have any queries, please write to us at bsd@mpa.gov.sg or digitalbunker@mpa.gov.sg.

CAPT DAKNASH GANASEN
SENIOR DIRECTOR (OPERATIONS & MARINE SERVICES)
for CHIEF EXECUTIVE
MARITIME AND PORT AUTHORITY OF SINGAPORE

SAMPLE ELECTRONIC BUNKER DELIVERY NOTE

Attachments X

Name ^

- bdn.json
- bdn_schema.json

Bunker supplier's Letterhead including licence number

BMT NO: 1676 BDN NO: BDN-09575

BUNKER DELIVERY NOTE

Delivery port	: SINGAPORE	Date of operation	: 28-Apr-2023
Delivery location	: P17	Vessel's name	
Bunker tanker's name		Vessel's IMO no.	
SB no.		Gross tonnage	
Alongside vessel (Date / Time)	: 28-Apr-2023 09:45:00	Owner/Operator	: MASTER/OWNER
Commenced pumping (Date / Time)	: 28-Apr-2023 11:00:24	ETD	: 30-Apr-2023
Completed pumping (Date / Time)	: 28-Apr-2023 18:14:24	Next port	: China
Delivery type	: 1 - SS448	Supply type	: I - International

Ship-To-Ship Transfer

PRODUCT SUPPLIED

COQ report number			
Product name	MFO380	Flash point °C (ISO 2719)	75
Viscosity at 40 °C, mm ² /s (ISO 3104)	305.9	Sulphur content, % m/m (ISO 14596 or ISO 8754)	3.27
COQ density at 15°C(kg/m ³) (ISO 3675 or ISO 12185)	0.9811	Metric tons delivered	2297.008
Water content % v/v (ISO 3733)	0.45		

<h4 style="text-align: center;">SUPPLIER'S DECLARATION</h4> <p>Declaration that bunker fuel supplied conforms with MARPOL Annex VI We declare that the bunker fuel supplied conforms with Regulation 18.3 of this Annex and that the sulphur content of the fuel oil supplied does not exceed: Please mark (x) in the applicable box(es) below</p> <p><input type="radio"/> the limit value given by regulation 14.1 of this annex</p> <p><input type="radio"/> the limit value given by regulation 14.4 of this annex or</p> <p><input checked="" type="radio"/> the purchaser's specified limit value of 3.5 (% m/m), as completed by the fuel oil supplier's representative and on the basis of the purchaser's notification that the fuel oil is intended to be used:</p> <p>1. in combination with an equivalent means of compliance in accordance with Regulation 4 of this Annex or</p> <p>2. is subject to a relevant exemption for a ship to conduct trials for sulphur oxides emission reduction and control technology research in accordance with Regulation 3.2 of this Annex.</p>	<h4 style="text-align: center;">MASTER'S / CHIEF ENGINEER'S ACKNOWLEDGEMENT</h4> <p>We acknowledge receipt of the above product and confirm its intended use and that the following samples were jointly taken by the continuous drip sampler at the vessel's manifold, sealed and numbered:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Seal no.</td><td style="width: 30%;"></td><td style="width: 40%;">Counter seal no. (if any)</td></tr> <tr> <td>Vessel</td><td></td><td></td></tr> <tr> <td>Bunker tanker</td><td></td><td></td></tr> <tr> <td>Bunker tanker</td><td></td><td></td></tr> <tr> <td>Surveyor</td><td></td><td></td></tr> <tr> <td>Others (To specify)</td><td></td><td></td></tr> </table>	Seal no.		Counter seal no. (if any)	Vessel			Bunker tanker			Bunker tanker			Surveyor			Others (To specify)		
Seal no.		Counter seal no. (if any)																	
Vessel																			
Bunker tanker																			
Bunker tanker																			
Surveyor																			
Others (To specify)																			

<h4 style="text-align: center;">SUPPLIER'S DECLARATION</h4> <p>For _____</p> <p>Company name</p> <p>Signature of Cargo Officer _____ Bunker Tanker's Stamp _____</p> <p>Date and Time 28-Apr-2023 18:44:56 _____ Full name in Block Letters _____</p> <p>Remarks: NIL</p>	<h4 style="text-align: center;">MASTER'S / CHIEF ENGINEER'S ACKNOWLEDGEMENT</h4> <h4 style="text-align: center;">CUSTOMER FEEDBACK</h4> <p>The following rating is satisfaction level of the bunkering operation (Please Tick)</p> <p><input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input checked="" type="radio"/> 5 Very Unsatisfied Very Satisfied</p> <p>Acknowledge By _____</p> <p>Signature of Master / Chief Engineer _____ Vessel's Stamp _____</p> <p>Date and Time 28-Apr-2023 18:45:00 _____ Panacevic S. _____ Full name in Block Letters _____</p> <p>Was a copy of SDS received? <input checked="" type="radio"/> Yes <input type="radio"/> No</p> <p>Was a Note of protest issued? <input type="radio"/> Yes <input checked="" type="radio"/> No</p>
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- Security features include: (1) locked to protect from edits, (2) QR code for manual verification, and (3) electronic verification via a verification facility.
- The eBDN also contains an attachment with machine readable/ interpretable data file, conforming to standardised formats and semantics, to enable interoperability by different IT systems.

ANNEX B

GENERAL GUIDELINES FOR BUNKER SUPPLIERS & BUNKER CRAFT OPERATORS

For a smooth and efficient transition into digital bunkering, bunker suppliers and bunker craft operators should adopt the following measures:

- I. Equip the barges with reliable internet connection on board, e.g., 5G/4G/LTE antenna, Satcomm, etc. The barges may also share their Wi-Fi hotspot with the receiving vessel if required.
- II. Provide sufficient training for the cargo officer. i.e., usage of the whitelisted digital bunkering solution(s) to complete the bunkering workflow and documentation electronically.
- III. Inform the customer, Master / Owner of the receiving vessel and surveyor, if engaged, in advance on the issuance of bunkering documentations electronically. This is to provide sufficient time for the receiving vessel to access the domain/URL(s) and receive emails with hyperlinks from whitelisted digital bunkering solution(s), and also prepare their electronic vessel/ company stamp.
- IV. A user manual should be prepared and provided to the crew of the vessel receiving bunkers to explain the use of the digital platform smoothly.

GENERAL GUIDELINES FOR VESSELS RECEIVING BUNKER

The receiving vessel should adopt the following measures:

- I. **Corporate ICT Policy**
 - a. Whitelist the domain/URL(s) and email sender to allow access to the digital bunkering solution(s), and prepare the electronic vessel stamp⁴ in advance for uploading.
 - b. Provide the Chief Engineer a device/computer with internet access during the port stay in Singapore.
- II. **Infrastructure and network**
 - a. Provide reliable network on-board, e.g., subscribe to satellite communications packages with good max-info-rate and committed-info-rate, backup satellite communications, 4G/5G coastal plans, etc. Alternatively, the receiving vessel may also

⁴ The electronic vessel stamp can be prepared by capturing an image (scanned/ photograph) of the stamp and uploading it onto the device/computer which the Chief Engineer would be using to access the digital bunkering solution(s).

request to tap on Wi-Fi hotspot if available, from the bunker barge's representative or bunker surveyor (if engaged).

- b. Carry out technology updates to ensure periodic refresh of IT assets, equipment and infrastructure.
- c. Ensure that the web browsers are up to date and security patched.
- d. IT system maintenance to be planned to minimise disruption of transmission during the bunkering operation, as it could impact smooth transmission of data and documents between the bunker barge and the vessel receiving the bunkers.

III. **Human factors**

- a. Brief the Chief Engineer/ ship's crew on digital bunkering system processes and issuance of bunkering documentations electronically in Singapore.