

Effective for Contracts dated from 12/02/2024

Gafta No.132

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THE GRAIN AND FEED TRADE ASSOCIATION

FUMIGATION RULES

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FUMIGATION RULES NO. 132

For contracts which incorporate the terms and conditions of these Rules for shipboard fumigation treatments, the following shall apply:

1.0 INTRODUCTION

- 1.1 The Parties agree that when fumigation is required, they shall appoint a company listed on the Gafta Approved Register of Fumigators.

In countries where national authorities are solely responsible for fumigation the requirement for a Gafta Approved Fumigator is waived.

- 1.2 The latest version of the Gafta Standard for Fumigation shall apply.

2.0 GENERAL

- 2.1 Fumigation operations must be carried out by a fumigation company approved by Gafta and the relevant National Plant Protection Organisation and/or the relevant National Health Authority, according to the custom of the port, location or place of service designated in the contract. Fumigation companies must have been successfully audited and certified as being compliant with the Gafta Standard for Fumigation (latest version) or hold a certificate of compliance with a recognised quality management system accepted by Gafta that is specifically relevant to the fumigation of agricultural commodities.
- 2.2 Where National Authorities (or other official authorities or organisations) in the country of service operate an approval system, then the fumigation materials and equipment in use must hold current approved status.

- 2.3 In accordance with standard trade practice the fumigant most frequently used is phosphine gas released from a proprietary metal phosphide product.
- 2.4 Gafta Approved Fumigators must operate in accordance with IMO/IMDG Code Recommendations on the Safe Use of Pesticides in Ships, the fumigant manufacturer's instructions and any other industrial standards and legislative norms relevant in the place of service.
- 2.5 Where there is a specified concentration level required by a National Authority that level is to apply as an acceptable concentration/dosage. Where no National Authority level is specified, the Fumigator must advise the appropriate efficacy criteria in relation to the required minimum effective dosage, method of treatment and exposure time. Guidance criteria are available in a number of guide notes and handbooks.
- 2.6 Fumigation companies or their representatives must be allowed full access to the vessel at the loading and/or discharge port as applicable, allowing them the opportunity to carry out all operations related to the fumigation process.
- 2.7 It is the responsibility of the principal to ensure the suitability of the carrying vessel and that the appropriate permissions regarding the operation of fumigation on board a vessel are agreed and acceptable to the Master/Owners, by incorporating suitable terms in the freight contract (Charter Party).
- 2.8 Fumigation may be performed within port limits, or other recognised places for vessels and goods to be fumigated, as set out and agreed in the contract between buyers and sellers for the contractual goods.
- 2.9 The responsibility of a fumigation company (when engaged to undertake a fumigation) is limited to the proper application of the fumigant, the following of the proper procedures, including health and safety considerations, and the exchange of appropriate information between the responsible parties. Where the correct

procedures are followed (in accordance with the contract of engagement) this is understood to be an acceptable and appropriate procedure against infestation.

- 2.10 It is a requirement of these Rules that a Fumigator is responsible for de-gassing at the discharge port. It is recommended that the Fumigator-at-Discharge is a company listed on the Gafta Approved Register of Fumigators.

3.0 TERMS AND DEFINITIONS

- 3.1 ***Clearance (also known as “gas free”)*** – is the assessment after the degassing period when the fumigator tests the air in the workspace to make sure that the concentration of fumigant gas has fallen to (or below) safe levels as defined in the relevant safety regulation.
- 3.2 ***Clearance Certificate (or Gas Free Certificate)*** – is the certificate confirming that any concentrations of fumigant are below Threshold Limit Value. The certificate is only valid at the time and place of issuance. This is provided by the Fumigator at discharge port after cargo de-gassing operations are concluded.
- 3.3 ***Degassing (venting)*** – is the process at the end of the exposure period, after the fumigation enclosure is unsealed, when fumigant gas desorbs and diffuses out of the product that was fumigated and the fumigation enclosure.
- 3.4 ***Exposure Time*** – is the period of time the product applied (toxic gas or biocide) is in direct contact with the target organism at a specific spot (location) to achieve the desired effect on the pest. The time required for in situ release in case of the active ingredient and/or the time required for dissipation (migration) throughout the product to the relative spot (location) is not part of the exposure time. As long as the product applied is not in direct contact with the target organism, the exposure time has not commenced. The exposure time is dependent on physical, chemical and biological parameters e.g. temperature, relative humidity, target species, product applied etc.

- 3.5 **Fumigation** – is the process of application, exposure and dissipation of a toxic chemical in its gaseous state with the express purpose of control of target pests in the product and its enclosure.
- 3.6 **Fumigation Certificate (or Fumigant Application Certificate)** - is the document issued after fumigant application reflecting the service rendered, and the dosage, characteristics and procedure applied.
- 3.7 **Fumigated Cargo** – products in bulk or bags, which have been treated in a vessel with a Fumigant by a Fumigator and accompanied by a shipboard Fumigation Certificate. Note: Products which have been fumigated prior to loading in a store or silo are not considered to be a Fumigated Cargo for the purposes of these rules.
- 3.8 **Fumigator** – means the appointed fumigation company including the Fumigator-in-Charge and his trained technician(s)
- 3.9 **Fumigant Application** – is the process of introduction of a toxic gas or a chemical releasing toxic gas into the product to be treated and its enclosure, for control of target organisms.
- 3.10 **In-transit Fumigation** – is where fumigation takes place after the fumigant application while the vessel is in-transit, and the Fumigator has discharged his responsibilities by formally handing over in writing to the ships Master responsibility for maintaining safe conditions in all occupied areas. Note: the Fumigator is unable to assess the full efficacy of the fumigation before sailing.
- 3.11 **Re-circulation System** – is the supporting equipment for improvement of gas penetration in the fumigated cargo.
- 3.12 **Removal/disposal of spent fumigant.**
Removal – is the process of removal of retrievable parcels (sleeves, sachets, plates, blankets, strips) of residues from the reacted metal phosphides at the end of the exposure/fumigation process. Residues must be handled in accordance with the applicable regulations and manufacturer's safety guidelines.

Disposal – is the removal of any retrievable fumigant residues (bags, sleeves, blankets etc.) from the shipment and from the port to be disposed of safely in accordance with local requirements. This must be carried out by a Fumigator and a record should be kept of how residues have been disposed.

4.0 ACCEPTED METHODS OF PHOSPHINE APPLICATION

The methods of phosphine application methodology that can be considered for “in transit” fumigation of bulk or bagged cargoes in ships holds and the key elements of each are listed below.

The criteria that are relevant in respect of the fumigation are (inter alia):

- Type of fumigant product and formulation used
- Application method
- Exposure time
- Conditions: temperature/moisture
- Type and volume of cargo/product

4.1 Surface tablet/pellet application

The application of tablets or pellets of a metal phosphide to the cargo surface.

Tablets/pellets must be buried under the surface of the cargo into the top half metre and not scattered loosely on the surface.

High concentrations of gas build up in the head space, potentially resulting in significant leakage through the hatch covers unless they are very well sealed. Penetration down into the cargo is limited. Powdery residues cannot be removed

4.2 Surface blanket application

The application of metal phosphide in blankets, sachets, strips or sleeves, placed on the surface of the cargo (or into the top half metre).

All points as per 4.1 except that with this method the powdery residues can be removed prior to discharge.

4.3 **Fumigation by probing**

The application of tablets or pellets by probing into the cargo from at least 0.3 m depth up to a few metres. Using this method there is less loss of gas through the hatch covers than in 4.1. A better penetration of gas is experienced compared to applications closer to the cargo surface. The procedure is only fully effective if the holds are relatively shallow and voyage time relatively long. Powdery residues cannot be removed.

4.4 **Probing sleeve application.**

The application of tablets or pellets by probing into the cargo a few meters in retrievable sleeves. All points as per 4.3 except that with this method powdery residues can be removed prior to discharge.

4.5 **Surface application with re-circulation.**

The fitting of an enclosed powered re-circulation system to the hold and application of metal phosphide tablets or pellets to the surface. This to ensure the gas is homogeneously and rapidly distributed throughout the cargo. Powdery residues cannot be removed.

The recirculation system consists of a permeable tubular loop placed in the lower part of a hold prior to commencement of loading operations. The tubular loop is connected via an impermeable tube/hose to the headspace of the hold. The mixture of gas and air is circulated by a spark proof ventilator.

4.6 **Probing sleeve/blanket application with re-circulation.**

The fitting of an enclosed powered re-circulation system to the hold and application of metal phosphide in blankets, strips, sachets or sleeves on the surface or probed into the top one or two meters. As per 4.5 except that with this method, powdery

residues can be removed. Also gaseous residues can be removed more easily than with other methods, as once the powdery residues have been removed the recirculation system can be used to assist in the expelling of the gas.

5.0 SCOPE OF SERVICE AND DOCUMENTATION.

5.1 Scope of Service

If shipboard fumigation is necessary it can be considered under two headings:

5.1.1 ***In-port fumigation***, where fumigant application, exposure, degassing and clearance are all completed at one port which could either be the load port or discharge port, and therefore efficiency of the fumigation can be established at that port. If fumigation is at load port Fumigation Certificate (as 5.2.1 below) will be issued before sailing, or if fumigation is carried out at discharge port Fumigation Certificate (as 5.2.1 below) will be issued before discharge.

5.1.2 ***In-transit fumigation*** can be provided by a fumigator either partially or in full and the scope of such service is determined by the customer's order for corresponding certificate(s). See also 3.10.

5.2 Documentation

5.2.1 **Fumigation Certificate (or Fumigant Application Certificate)** - issued in accordance with the requirements of the contract and/or phytosanitary measures and/or International standards confirming the correct fumigant application before sailing and/or confirming that the correct treatment has been completed prior to discharge.

5.2.2 **Clearance Certificate (or "Gas Free" Certificate)** – issued at the discharge port by fumigators' after providing the correct cargo degassing (venting) on arrival.

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