

3. ACCEPTABLE TREATMENTS

Treatments for barrier clearance that are acceptable to AQIS can be categorised into four groups:

- 3.1 Fumigation treatments
- 3.2 Heat sterilisation treatments
- 3.3 Permanent immunisation
- 3.4 Newly manufactured processed panel products

These approved treatments are fully described below.

3.1. FUMIGATION TREATMENTS

The only two fumigants accepted by AQIS are:

- methyl bromide (CH_3Br); and
- sulphuryl fluoride (SO_2F_2).

These two chemicals have been found suitable to eliminate the quarantine insect concerns in relation to timber, when applied in the prescribed manner.

Since methyl bromide is an odourless gas, small dosages of chloropicrin (tear gas) are sometimes added as a warning agent. If a fumigation certificate states that 98% methyl bromide 2% chloropicrin has been used, this is acceptable. This is the maximum allowable percentage of chloropicrin.

a. Methyl Bromide and carbon dioxide mixtures

Under the AQIS Methyl Bromide Fumigation Standard, the use of **dilutants such as carbon dioxide (CO_2) is acceptable provided the fumigator calculates the required dose on the methyl bromide content only.**

Where a mixture (eg. methyl bromide 80% and carbon dioxide 20%) is used, the fumigator will need to apply more of the solution to achieve the required dosage than if a full strength solution (100% methyl bromide) is used. There is no change to the required dosage recorded on the fumigation certificate other than to indicate that the dosage refers to the methyl bromide component of the mixture only (see 3.1.1 b).

3.1.1. AQIS Fumigation Certificate Requirements

- All requirements set out previously under the heading of Requirements for Treatment Certificates in this section are mandatory for fumigation certificates.
- Fumigant must be either methyl bromide (CH_3Br) or sulphuryl fluoride (SO_2F_2).
- Fumigation rates must be applied according to the tables set out in Chapter 2, Section 7, pages 9 and 10 to reflect the minimum temperature that occurred during the period of fumigation.
- Fumigation certificate critical requirements are further explained in the following pages.

See the following example for the critical requirements for fumigation certificates.

EXAMPLE OF A FUMIGATION CERTIFICATE

Treatment Provider Letterhead

The goods described below were treated in accordance with the fumigation requirements of the Australian Quarantine and Inspection Service.

Details of Treatment

Name of fumigant(a).....
Dosage*(b).....g/m³
Duration(c)..... hours
Minimum ambient temperature during fumigation(d).....
Consignment identifier (or numerical link)
Description of cargo.....(e).....
Date.....(f).....
Treatment Provider Signature.....

*Methyl Bromide statements must specify that DOSAGE refers to methyl bromide component of the mixture ONLY.

Dosage is the calculated amount of fumigant (exclusive of any dilutants) applied to a fumigation enclosure to treat a consignment. Usually expressed as a weight of chemical per volume of treated space.

The critical requirements set out in the example certificate above are further described on the following pages.

a. Name of fumigant

Methyl bromide (CH₃Br) and sulphuryl fluoride (SO₂F₂) are the only two fumigants approved by AQIS to be used for the treatment of timber and dunnage.

Penalty for non-conformance - accepting a treatment certificate that has an unapproved fumigant is a 'MAJOR' non conformity as per the Sanctions Policy in Appendix B.

- Random rate of the brokerage may be increased.
- The accredited person may accrue 1 penalty point.

b. Dosage

The minimum dosage an accredited person can accept is based on the lowest temperature reached during the fumigation.

Methyl Bromide(CH₃Br)

The benchmark for methyl bromide fumigation is 48 grams per cubic metre (g/m³) at 21°C for 24 hours. For each 5°C the temperature is expected to fall below 21°C the fumigator must add 8g/m³ of methyl bromide. See the following table to ascertain correct dosage rates for methyl bromide in relation to temperature. The minimum duration of this treatment is 24 hours regardless of temperature and dosage.

Methyl Bromide and Carbon Dioxide Mixtures

When assessing fumigation certificates for treatments where mixtures of methyl bromide and carbon dioxide have been used, accredited brokers can answer “No” to the 2nd barrier question in COMPILE in the following circumstances:

If the fumigation certificate clearly states that the dosage of methyl bromide complies with AQIS requirements (See table: prescribed minimum dosage of methyl bromide (CH₃Br) for various temperatures) AND

If the fumigation certificate clearly indicates that the dosage recorded in the certificate refers to the methyl bromide component of the mixture only.

Examples of acceptable methyl bromide statements are included below

"Dosage of methyl bromide (excluding dilutant)"

“Dosage of methyl bromide only”

If the treatment provider supplies written confirmation confirming that the dosage of methyl bromide recorded on the certificate complies with AQIS dose requirements and refers to the methyl bromide component of the mixture only.

Prescribed minimum dosage of Methyl Bromide (CH₃Br) for various temperatures (except under vacuum - see note 2 on following page)

| |
|----------------------------------------------------------------------------------------------------|
| 48 g/m³ (3lbs/1000 cu ft) for 24 hours at minimum of 21°C (70°F) or above |
| 56g/m³ (3.5 lbs/1000 cu ft) for 24 hours at a minimum of 16-20°C |
| 64g/m³ (4 lbs/1000 cu ft) for 24 hours at a minimum of 11°-15°C |
| 72g/m³ (4.5 lbs/1000 cu ft) for 24 hours at a minimum of 5°-10°C |
| 80g/m³ (5 lbs/1000 cu ft) for 24 hours at a minimum of 4°C |

* See Conversion Factors in Chapter 2, Section 7, page 12 to convert these values between metric and imperial.

Notes:

1. AQIS has concerns about the reduced effectiveness of methyl bromide treatments when temperatures within the fumigation enclosure drop below 10°C at any time during the treatment period.
In instances when treatments performed below 10°C are found to be ineffective through AQIS monitoring activities, the relevant consignments will be directed for re-fumigation at a quarantine approved premises.
For the purposes of clearing a consignment, AQIS will continue to accept certification for quarantine treatment T9047 where the fumigation is performed below 10°C. The long term acceptance of these certificates will be subject to an AQIS/Industry review to determine appropriate entry processing measures that assist AQIS monitoring activities without unnecessarily impeding the flow of consignments through the quarantine border. Further advice on the outcomes of this review will be provided in due course.
2. Methyl bromide under vacuum is only acceptable if applied at:
64g/m³ for 4 hours at 21°C or above under vacuum (660mm vacuum).
64g/m³ for 5 hours at a minimum of 4°C under vacuum (660mm vacuum).
3. In most circumstances the minimum dosage required for barrier concerns is 48 g/m³ CH₃Br. However, AQIS has granted one exemption. Due to Environmental Health Authority (EHA) requirements in Singapore, it is against the law to fumigate with methyl bromide at rates above 40 g/m³. Should an accredited person receive a certificate at this rate the time of exposure must be a minimum of 30 hours to compensate for the lower rate. Should a Singapore certificate state the normal recognised rate of 48 g/m³ CH₃Br for 24 hours then this should be accepted. Please note this exemption applies to Singapore only.
4. Accredited persons must not accept certificates that state that a treatment in excess of 128 g/m³ of methyl bromide has been applied. Such certificates are to be referred to AQIS for consideration.

Sulphuryl Fluoride (SO₂F₂)

The prescribed minimum dosage for treatment with sulphuryl fluoride for various temperatures is outlined in the following table.

Prescribed Minimum Dosage of Sulphuryl Fluoride (SO₂F₂) for various Temperatures

| |
|-----------------------------------------------------------------------------------------------------|
| 64g/m³ (4 lb/1000 cu ft) for 16 hours at a minimum of 21°C (70°F) or above |
| 64g/m³ (4 lbs/1000 cu ft) for 24 hours at a minimum of 15.5°C (60°F) |
| 80g/m³ (5 lbs/1000 cu ft) for 24 hours at a minimum of 10°C (50°F) |
| 104g/m³ (6.5 lbs/1000 cu ft) for 24 hours at a minimum of 4.5°C (40°F) |
| 80g/m³ (5 lbs/1000 cu ft) for 32 hours at a minimum of 4.5°C (40°F) |

Note: The minimum rate of sulphuryl fluoride (SO₂F₂) that is acceptable to AQIS is 64g/m³.