

Targeted consultation on revised proposals

*SAFE WORK INSTRUMENT
SPECIFYING REQUIREMENTS FOR
USING ETHANEDINITRILE (EDN)*

July 2020

The Environmental Protection Authority (EPA) is currently considering an application to approve ethanedinitrile (EDN), which, subject to the EPA's approval, may be used as a fumigant for the phytosanitary treatment of logs and wood products.

The EPA is yet to approve EDN or set certain controls for EDN under the Hazardous Substances and New Organisms Act 1996 (HSNO), such as the tolerable exposure limit (TEL), or other restrictions on the use of EDN. Further information about EDN and the application to the EPA to approve this substance is available on the EPA's website: www.epa.govt.nz

WorkSafe has developed proposed workplace requirements that will apply to EDN subject to the Minister's approval of the safe work instrument (SWI) and the EPA's approval of the substance. We consulted on these proposals between 28 February and 5 April 2020. We received submissions from industry, central and local government, among others.

We have considered comments about the operational impact of the original proposals. Where practicable, we have revised the proposals in light of these comments, and to ensure they are both workable and consistent with the Health and Safety at Work Act 2015 (HSWA).

We have also reviewed additional modelling commissioned by the applicant. This modelling became available to us during the first round of consultation on this safe work instrument (SWI).

Our consideration of submissions and the additional modelling has been balanced against ensuring the health and safety of workers and others who may be exposed to risk arising from work using this fumigant. Furthermore, the information available on the use of EDN as a fumigant remains limited despite the EPA's substance approval process and our SWI development process.

Consultation for safe work instruments

Before approving a SWI, the Minister for Workplace Relations and Safety must be satisfied that the appropriate persons and organisations have been consulted on its subject matter. As submissions received during consultation have led to significant changes to our original proposals, we are now carrying out targeted consultation on these revisions.

How to have your say

Have your say by reviewing the proposed requirements and completing the submission form. The deadline for the receipt of all submissions is 5pm, Friday 7 August 2020.

Next steps

Following this targeted consultation on our revised proposals, we will consider any submissions before finalising the draft SWI. It will then be presented to the Minister for his consideration. If the Minister approves the SWI, we will notify the SWI in the New Zealand Gazette.

If the Minister approves the SWI, the EPA's Decision Making Committee (DMC) will be able to continue its consideration of the application to approve this substance with knowledge of the workplace requirements that will apply to EDN if it is approved for use in New Zealand.

If you have any questions about our proposals or the SWI development process, please contact us at: regulatory.frameworks@worksafe.govt.nz

Proposed requirements for EDN

In developing our original proposals, we evaluated the application documents provided to the EPA, the EPA staff report and science memorandum, information provided by the applicant to WorkSafe, and modelling commissioned by WorkSafe to gain clarity on the likely air dispersion of EDN.

We considered how and where EDN is likely to be used; how and where similar substances are currently used; the requirements that apply to substances with similar hazard profiles, and the need for a precautionary approach in proposing requirements for new substances of this nature.

The consultation process has provided useful insight on the operational impact of these proposals.

Similarity to existing substances

As we noted in the first consultation, the proposed use (fumigant for export logs and wood products), use location (ports), and hazard profile (class 6.1B fumigant) of EDN are similar to those of methyl bromide.

The Health and Safety at Work (Hazardous Substances) Regulations 2017 (the Hazardous Substances Regulations) contain specific provisions on the use of methyl bromide for quarantine fumigation (regulations 14.32-14.40).

Our original proposals adapted the existing requirements for methyl bromide, taking into account the differences between the two substances, such as the likely rate of absorption of EDN into wood. However, unless it is clear that the methyl bromide requirements are inappropriate for EDN, our position remains that they are a workable baseline that should also apply to EDN.

Air dispersion modelling

EDN is not currently used as a fumigant in New Zealand, and is used as a fumigant in relatively few jurisdictions, often under different conditions than those proposed for New Zealand. This means there is limited information that can be used to generate workplace requirements that are appropriate for the proposed use of this substance in New Zealand.

For this reason, WorkSafe developed a draft set of requirements and commissioned air dispersion modelling to generate predictions about the substance's likely behaviour based on probable use patterns and locations to test whether our proposals were appropriate.

The applicant provided additional air dispersion modelling to the EPA as part of its application to the EPA to approve this substance, which is available on the EPA's website: www.epa.govt.nz

This modelling became available during our consultation on proposed requirements for work with EDN. We have now reviewed this modelling and compared it to the modelling we commissioned. While the two sets of modelling take different approaches, they can be viewed as complementary, and when considered jointly, provide useful predictions about the likely behaviour of EDN in a fumigation setting.

While the assumptions in both sets of modelling were based on actual fumigation data, the WorkSafe-commissioned modelling was based on potential worst-case scenarios, whereas the applicant-commissioned modelling was based on a wider range of exposure percentiles. We have reviewed this modelling and it has informed some changes to our proposed requirements.

Requirements set by the EPA

A number of submissions commented on requirements that will be set by the EPA, including use restrictions that may be placed on the substance, or the tolerable exposure limit (TEL) for EDN.

WorkSafe can propose workplace requirements for substances approved or reassessed by the EPA if we consider that the default requirements under HSWA do not adequately protect the health and safety of workers and others from the risks arising from work with those substances. However, the EPA is responsible for setting requirements to protect public health and the environment.

For the consistency and workability of the SWI, we may refer to requirements set by the EPA in the SWI, but the final shape of those requirements will be determined by the EPA's Decision Making Committee (DMC), and the SWI needs to take proper account of those requirements.

Depending on the requirements that the EPA imposes, we may need to amend the SWI following the EPA's approval. For that reason, some of the use requirements described below are pending the conditions of the EPA approval, if the EPA approves EDN.

Precautionary approach

As the use of EDN as a fumigant is new to New Zealand, we took a precautionary approach in proposing requirements. This is to provide for the range of likely fumigation volumes, while requiring the PCBU to ensure the health and safety of fumigation workers, other workers, and other persons who could be affected by work with EDN, so far as is reasonably practicable.

The proposed requirements will lead to the development of a body of data on the use of EDN, any incidents that occur, and the suitability of the workplace requirements. This will allow us to compare modelled predictions with actual data, and if appropriate, revise the requirements in the SWI at a future date.

Risk management approach

During consultation, industry presented information to support requirements based on a risk management approach, reflecting current practice within the framework of the methyl bromide requirements. Where appropriate, we have adapted our proposals to provide for this approach.

Changes to proposals

The purpose of this consultation is to consult on significant changes to the following proposed requirements:

1. definition of buffer zone period
2. use restrictions (item one of the first consultation document)
3. wind speed and direction monitoring (item five of the first consultation document)
4. entry restrictions for workers not carrying out fumigation-related work (item six of the first consultation document)
5. concentration of EDN before ventilation takes place (item 11 of the first consultation document)
6. restriction on time of ventilation (item 12 of the first consultation document)
7. restriction on movement of logs or processed wood following ventilation (item 13 of the first consultation document)
8. notification of other PCBUs (bullet point three of item 23 of the first consultation document).

Those proposed requirements not included in this document remain as in the original consultation document. Their final wording may vary following the drafting process. We have provided the original consultation document once again to enable a comparison.

A number of submissions included useful suggestions for minor changes to clarify the application of certain requirements. Other requirements (such as signage) will need minor changes in light of the revisions proposed in this document. These minor changes will be reflected in the final SWI.

A summary of submissions and the final SWI will be published following the Minister's consideration of these proposals.

1. Buffer zone period

This is the period during which the buffer zone must remain in place. We originally consulted on a period beginning when EDN is first applied in an enclosed space and ending three hours after ventilation has been completed.

We are now confident that a shorter set period in addition to a period of continuous measurements of EDN below the prescribed workplace exposure standard can be used to determine the duration of the buffer zone period.

We now propose that this period starts when EDN is first applied in an enclosed space and ends after:

- at least one hour has lapsed since ventilation was completed, and
- measurements taken adjacent to the enclosed space have continuously shown an airborne concentration of EDN below the prescribed workplace exposure standard for 15 minutes.

2. Use restrictions

In the first round of consultation, we proposed use restrictions for EDN based on our understanding of the uses the EPA is likely to allow if it approves the substance. We received a number of submissions requesting that a broader range of uses be accepted.

Any use restrictions in the SWI will reflect the final conditions of the EPA approval.

Shipping containers

Despite the above, we consider that if the EPA approves the use of EDN for fumigations in shipping containers, the proposed requirements in this SWI would also be appropriate for that use, due to the enclosed nature of shipping containers and the smaller volume of logs that they contain.

Processed wood

Some submissions commented that the application to the EPA for EDN was as a phytosanitary treatment for the fumigation of logs and for wood products. We propose to reflect this by expanding the uses of EDN permitted under this SWI to the fumigation of logs and processed wood, rather than solely to log fumigation, subject to the EPA's approval.

3. Wind speed monitoring

The original proposal required a longer period of wind speed and direction monitoring than specified for methyl bromide, for which it is required only during ventilation.

We now propose to reflect the requirements for methyl bromide and the revised definition of the buffer zone period by requiring wind speed monitoring every three minutes at the following times:

- when EDN is being applied
- when the enclosed space is being ventilated until:
 - at least one hour has lapsed since ventilation was completed, and
 - measurements taken adjacent to the logs or processed wood being fumigated have continuously shown an airborne concentration of EDN that is below the prescribed workplace exposure standard for a period of 15 minutes
- when an unintentional release occurs until:
 - the unintentional release has been stopped, and
 - measurements taken adjacent to the logs or processed wood have continuously shown an airborne concentration of EDN below the prescribed workplace exposure standard for a period of 15 minutes.

4. Entry restrictions

Our original proposal was that entry to the buffer zone during the buffer zone period would be allowed only for workers carrying out fumigation-related work. Submissions indicated this would have a significant operational impact on ports and other businesses by effectively establishing a closed area of 50m around each fumigation for 24 hours or longer.

The proposal for a 50m minimum buffer zone excluding members of the public, as currently applies for methyl bromide, remains unchanged. However, we are now proposing that the entry restriction for workers not carrying out fumigation-related work will apply to the area where the prescribed worker exposure standard for EDN is, or is likely to be, exceeded.

Only workers carrying out fumigation-related work who are wearing personal protective equipment that is suitable to ensure the worker is not exposed to a level of EDN above the prescribed worker exposure standard will be allowed to enter this area.

As applies for the buffer zone, this will require the PCBU to establish an area based on the particular circumstances of each fumigation and informed by monitoring data.

The PCBU will need to ensure other PCBUs whose workers carry out work in the buffer zone are notified of the intended fumigation in accordance with the revised notification requirement detailed further below.

5. Ventilation requirements (concentration of EDN before ventilation takes place)

Ventilation of logs or processed wood takes place at the end of fumigation, when the remaining fumigant in the enclosed space is released. In order to minimise the residual fumigant that is released and the associated risk, we propose that ventilation must not occur until the residual fumigant in the enclosed space drops to a specified level.

Following our review of modelling commissioned by the applicant and comparison with the modelling commissioned by WorkSafe, we are now proposing that ventilation does not begin until the concentration of EDN in the enclosed space is 700ppm or less, rather than 500ppm or less as originally proposed.

6. Ventilation requirements (restrictions on time of ventilation)

Air dispersion modelling predicts that EDN will disperse faster during daylight hours. We originally proposed restricting ventilation to between 8am and 3pm to limit the spread of residual fumigant released at the end of fumigation. We continue to consider that modelling indicates a more limited dispersion of fumigant during night-time hours.

Having reviewed the applicant-commissioned modelling and compared it with our own, as well as submissions from ports and industry, we now propose to restrict ventilation to between the hours of sunrise and sunset. We consider that this will reduce the operational impact on ports and provide for seasonal variation without significantly increasing the risk to workers and others.

7. Restriction on movement of logs or processed wood following ventilation

After ventilation of the enclosed space, time is required for residual fumigant to fully disperse. To mitigate the risk posed by large releases of fumigant when logs are moved, we originally proposed that the buffer zone must remain in place from the time EDN is applied into the enclosed space until three hours after ventilation is complete, and that logs not be moved during this time.

Following our comparison of the modelling we commissioned and the modelling commissioned by the applicant, we now consider that a shorter period will allow the dispersion of any residual fumigant in the treated area.

In line with the new definition of the buffer zone period described above, we now propose that logs or processed wood may not be moved until at least one hour following the completion of ventilation, and at least 15 minutes have lapsed since measurements taken adjacent to the logs or processed wood last showed an airborne concentration of EDN above the workplace exposure standard.

8. Notification of other PCBUs

The Hazardous Substances Regulations and the Health and Safety at Work (Hazardous Substances – Requirements for Specified Fumigants) Safe Work Instrument 2017 set requirements to notify people in areas surrounding an intended fumigation before it begins.

As we have revised the entry restriction detailed further above, we are now proposing that the requirement to notify other PCBUs about an intended fumigation provide further detail on the PCBUs to be notified.

Specifically, we are proposing that a PCBU who intends to carry out fumigation with EDN must notify every PCBU whose workers carry out work in the buffer zone of its intention to carry out the fumigation not less than 24 hours before applying the EDN.

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