



# Australian Grain Industry – Code of Practice Technical Guideline Document

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## No. 15 MANAGING CHEMICAL RESIDUE VIOLATIONS

Compiled on behalf of the Australian Grain Industry by:  
**Grain Trade Australia**

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 **GRAIN TRADE  
AUSTRALIA**  
*Facilitating Trade*

## Australian Grain Industry – Code of Practice

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### Technical Guideline Document

## No. 15 Managing Chemical Residue Violations

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*No.15 – Managing Chemical Residue Violations*



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## 1. Application

This Technical Guideline Document (TGD) refers to industry best practice for managing market related chemical residue violations and guidance for atmospheric chemical violations associated with grain transport units–

This TGD complements the Australian Grain Industry - Code of Practice (GTA Code of Practice) and the Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances (as may be amended from time to time).

This revised draft also includes guidance for atmospheric chemical violations associated with the use of fumigant gases. The impact may be determined following grain transport units, of grain that has been fumigated with including phosphine and other fumigant gases, with residues detected at receipt or handling points. This additional guidance is intended to support worker safety, consistent receipt practices, traceability and corrective action. It does not replace legislative obligations, approved label directions, workplace health and safety procedures or company-specific procedures.

It equally applies to the detection of any chemical used on grain or infrastructure handling grain in excess of regulatory or contract requirements.

The information contained in this TGD is for general guidance on Managing Chemical Violations only. Given the changing nature of laws, rules and regulations, there may be delays, omissions or inaccuracies in information relating to regulatory controls identified in this TGD. This TGD does not deal with other compounds under various health and safety regulations.

## 2. Discussion on Chemical Residue Violations

### 2.1 What is a Chemical Residue Violation

A chemical residue violation is the presence of a chemical above a specified limit (workplace exposure limit, or WEL, maximum residue limit, or MRL).

The chemical may be defined as any pesticide (includes /fumigants) used in the agricultural industry that may be associated with grain or grain related products.

The MRL and WEL that should not be exceeded may be set by a number of means including:

a) Workplace Exposure Limits (WELs) set by a relevant health authority.

a)b) MRLs with non-legal status may be set by:

b)c)

- The domestic or international customer, via a contract.
- The marketer. For example, where no reference is made in the contract to limits set.
- The Australian grain industry. For example, the Recommended Outturn Limit (ROL) as outlined in the document "Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances for the applicable season". Note that unless stated otherwise, this ROLs is not legally binding.

c)d) MRLs that have a government legal status may be set:

- Australian regulatory bodies such as the Australian Pesticides and Veterinary Medicines Authority (APVMA), Food Standards Australia and New Zealand (FSANZ), the Australian Department of Agriculture, Fisheries and Forestry and Water Resources (DAFFWR) which may set domestic standards.
- Overseas regulatory bodies that set MRLs on commodities imported into their countries respectively.

Refer to:

- [Safe Work Australia Workplace Exposure Limits for Airborne Contaminants](#)
- Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances (produced annually) <http://www.graintrade.org.au/nwpgp>
- APVMA Australian Agricultural and Veterinary Chemicals Code Instrument No. 4 (MRL Standard) 2012 <https://www.legislation.gov.au/Series/F2012L02501>
- APVMA <http://apvma.gov.au/>
- FSANZ Australian Food Standards Code <http://www.foodstandards.gov.au/code/Pages/default.aspx>
- Codex MRLs <http://www.fao.org/fao-who-codexalimentarius/standards/pestres/pesticides/en/>
- NRS Australian and Overseas MRL database <http://apps.agriculture.gov.au/NRSMRLExternal/Public/Disclaimer.aspx>

For clarity, this TGD now distinguishes chemical residue violations from atmospheric chemical violations. A chemical residue violation concerns chemical residues in grain or grain products. An atmospheric chemical violation concerns chemical gas or vapour concentrations in or around grain, transport, storages or receipt activities that exceed an applicable workplace exposure standard, label requirement, customer requirement, regulatory limit or industry requirement.

## 2.2 What is the Cause of a Chemical Residue Violation

There are many causes of a chemical residue violation. These may include:

- Application of a chemical not approved for use.
- Application of a chemical above legislated rates (above label rates or not in compliance with label directions).
- Failure to adhere to other label requirements such as with-holding periods.
- Incorrect application of a chemical via any other means such as by a non-approved person.
- Multiple applications of a chemical leading to “chemical residue build-up”.
- Contamination of a commodity with a non-approved chemical via means such as inadvertent contamination from infrastructure where grain with that chemical was previously handled.
- Supply of grain that may have been correctly treated, to a market with a lower MRL than the Australian MRL.

## 2.3 What is the Cause of Atmospheric Chemical Violation

Causes of atmospheric chemical violations may include:

- Insufficient ventilation after fumigation.
- Fumigation in transit where not permitted.
- Failure to follow label instructions.
- Inadequate gas level monitoring before transport or delivery.
- Poor fumigation practices or repeat supply chain practices that allow grain transport to present with unsafe gas concentrations.
- De-sorption of gas prior to, or during transport.

## **2.32.4 How are Chemical Residue Violations Detected**

Chemical misuse or a resulting MRL violation may be detected through a number of means:

- a) Industry
  - The owner of the grain, or on their behalf, a third party obtaining a representative sample for analytical testing. For example, a marketer sampling and testing grain to confirm contractual specifications will be met if that grain is supplied.
  - An external party who doesn't own the grain, but who has some control of that grain, obtaining a representative sample for analytical testing. For example, a Storage Provider may sample and test as part of their Storage and Handling Contract obligations.
  - The buyer of the grain obtaining a representative sample for analytical testing to confirm the grain purchased meets their requirements.
  - An industry participant, who may or may not be as above, filing a complaint on the quality of the grain. This may relate to:
    - A contractual dispute; and
    - A complaint to Grain Trade Australia (GTA) as part of the Australian Grain Industry Code of Practice Complaints Handling Procedure.
- b) Regulator/Government
  - Samples may be taken and assessed as part of the National Residue Survey (NRS) conducted by the Australian government.
  - Samples may be taken as assessed as part of an Australian State Government traceback system, that may be as a result of a violation detected by the NRS or via a specific State Government targeted testing regime.
  - A government chemical residue monitoring program such as the Australian Total Diet Study conducted by FSANZ.
  - The importing country government obtaining representative samples of imported commodities and testing for compliance with their national regulations.

Refer to

- NRS Grains Program <http://www.agriculture.gov.au/ag-farm-food/food/nrs/plant-product-testing>
- Australian Total Diet Study <http://www.foodstandards.gov.au/science/surveillance/Pages/australiantotaldiets1914.aspx>

## **2.5 How are Atmospheric Chemical Violations Detected**

Breaches of Fumigation WELs may be detected through:

- Receival point gas monitoring.
- Workplace exposure monitoring.
- Pre-unloading testing.
- Incident reporting.
- Observation of fumigant tablets or pellets within grain transport.
- Or other monitoring undertaken in accordance with workplace health and safety procedures or site requirements.

## 2.42.6 Obligations on Industry

As outlined in the GTA Code of Practice (section 2.4):

- At all times, the grain Industry complies with all regulatory controls for chemicals”.
- “Where grain is known to contain a chemical that is in violation of a regulatory or market requirement, industry will not supply that grain to that market unless:
  - A mitigation strategy is implemented; and/or
  - The supplier receives written agreement from the customer of the grain, provided regulatory requirements are not violated”.
- “As required by legislation:
  - If any intentional mis-use of a chemical is identified, it is to be reported to the relevant authority; and
  - Where an MRL is found to be in violation of market regulations, it is to be reported to authorities and the cause investigated as relevant.”

There may be serious consequences for failure to comply with Industry and regulatory requirements, including:

### Australia

- Chemicals are registered for both in-crop and post-harvest use on grain. In Australia there are two Government bodies (Australian Pesticides and Veterinary Medicines Authority (APVMA) and Food Standards Australia New Zealand (FSANZ)) responsible for registration of chemicals and for determining MRLs of chemicals <sup>1, 2</sup>;
- Australia is a full signatory to the Codex Alimentarius Commission<sup>3</sup>, an international body created by the World Health Organisation and the Food and Agriculture Organization to develop, amongst other things, international MRLs. The Australian MRLs and the registration and use of chemicals, are binding in all Australian States and Territories;
- The Australian Government Department of Agriculture, ~~Fisheries and Forestry (DAFF)~~ ~~and Water Resources (DAWR)~~ control exports under the Export Control Act 1982<sup>4</sup>. Plant Export Operations<sup>5</sup> is part of ~~DAFF~~ and is responsible for this task. Plant Export Operations interfaces with the grain industry through various means such as- the Grain and Plant Products Export Industry Consultative Committee<sup>6</sup>; and
- The Australian National Residue Survey (NRS)<sup>7</sup> gathers information on chemical residues and environmental contaminants in the products of participating industries such as grain. Samples are taken from a range of domestic grain products, container exports and all bulk exports of prescribed grains and assessed for levels of a range of chemical compounds. Where MRL violations are detected, the NRS initiates a trace-back system to determine the cause. That trace-back system is done by the relevant regulatory authority in each State and Territory as required by legislation. As required by legislation, NRS reports on those violations. Under this Code, the following industry sectors are required to actively participate on a continuous basis in the NRS grains residue monitoring program, and to comply with any NRS directions applying to that program:
  - All grain organisations out-turning on the domestic market to an end-processor (who is not defined as a primary producer) ;
  - All bulk grain exporters;

<sup>1</sup> The Australian MRL database - [www.apvma.gov.au/residues/mrl.shtml](http://www.apvma.gov.au/residues/mrl.shtml) The Food Standards Australia New Zealand (FSANZ) database - [www.foodstandards.gov.au](http://www.foodstandards.gov.au)

<sup>2</sup>Maximum Residue Limits of agricultural and veterinary chemicals and associated substances in food commodities – <https://www.legislation.gov.au/Series/F2012L02501>

<sup>3</sup> Codex Alimentarius Commission - <http://www.codexalimentarius.org/>

<sup>4</sup> Export Control (Plants and Plant Products) Orders 2005 - <http://www.comlaw.gov.au/Series/C2004A02606>

<sup>5</sup> Exporting grain from Australia - <http://www.agriculture.gov.au/export/controlled-goods/plants-plant-products>

<sup>6</sup> Grain and Plant Products Export Industry Consultative Committee - <http://www.agriculture.gov.au/biosecurity/partnerships/consultative-committees/gppeicc>

<sup>7</sup> National Residue Survey - <http://www.agriculture.gov.au/ag-farm-food/food/nrs/plant-product-testing>

- All container exporters; and  
Where relevant, operators of facilities who provide grain as part of the above services

**Export:**

- Each importing country operates its own legislation in relation to chemicals residues permitted on imported grain. Industry uses the information available to:
  - Understand those requirements prior to supply of grain;
  - Implement measures to meet those requirements; and
  - Implement corrective action practices when residues on grain are identified that do not meet importing country MRLs.

As required by legislation industry will not trade (i.e., supply) in grain on the domestic or export market that contains a chemical in violation of relevant legislation

**Where required by legislation:**

- If any intentional mis-use of a chemical is identified, it is to be reported to the relevant authority; and
- Where an MRL is found to be in violation of market regulations, it is to be reported to authorities and the cause investigated as relevant."

Unless industry complies with these obligations, the consequences can be severe, including:

- Financial penalties to the individual [trader and](#) exporter;
- Loss of market to that [trader or](#) exporter;
- Loss of consumer confidence in [Australia and](#) the importing country; and
- Impacts on all industry such as increased monitoring by the [Australian or](#) importing country government (requiring sampling and testing, certification, leading to increased costs for exports) or closure of the market to all Australian [traders and](#) exporters.

To date, the Australian grains industry takes these matters seriously and has a very good record for MRL compliance and chemical use.

In addition, where atmospheric concentrations exceed applicable workplace exposure standards or site safety limits, personnel safety must be the priority. The transport unit should be managed in accordance with company workplace health and safety procedures, access should be restricted until safe levels are achieved, and the grain should not enter normal commerce until compliance with applicable requirements is demonstrated.

### **2.52.7 Actions to Undertake**

Responses to chemical residue violations will vary according to the nature of the violation. Appropriate responses include:

- Confirming the violation;
- Reporting the violation if required;
- Taking remedial action; and
- Taking steps to reduce future incidents.

For atmospheric chemical violations in transport units, immediate operational responses should also include:

- Securing and isolating the vehicle,
- Stopping unloading activities,
- Restricting access,
- Verifying test results,
- Determining an initial risk category,

- Managing the grain through ventilation/re-testing, quarantine, return or other lawful management, and documenting the investigation.

#### 2.5.22.7.1 **Confirming the Violation**

~~An~~ ~~The~~ initial chemical residue violation should be confirmed to ensure that it is valid. This may involve a number of steps including:

- Contacting all parties involved confirming the sample and results relate to the grain in question.
- Ensuring all samples analysed were representative of the grain.
- Confirm results as reported by the laboratory are correct. Includes an understanding of the laboratory method used and the variability in testing.
- Confirm the market requirement.

Note that where the violation has been advised to the industry stakeholder by the NRS, the NRS has already confirmed the violation.

For atmospheric exceedances, confirmation may include:

- Ensuring testing equipment is calibrated.
- Conducting confirmatory testing where practical.
- Recording date and time, location, vehicle identification, supplier details, test methodology and results.
- Applying company site safety procedures while confirmation occurs.

#### 2.5.22.7.2 **Reporting the Violation**

When a chemical residue violation has occurred, in certain circumstances the violation must be reported to relevant authorities to enable an investigation to occur. ~~However~~ However, this is not always the case.

- a) Violation of a Market/Contract Requirement
  - This is generally a commercial matter between the buyer and seller;
  - It is generally not a regulatory matter; and
  - An official government investigation is usually not required. However, provision advice to DAFF of any market non-conformance is considered good practice ensuring access to relevant information and support for resolution of any regulatory requirements detected by an importing country government.
- b) NRS / DAFF
  - After confirmation of a violation under the NRS program, the relevant Australian state or territory government and the grain owner / handler and marketer are notified of the residue violation by the NRS.
  - In some instances, where there is a distressed cargo, industry should consider liaising with DAFF Plant Exports Branch directly or via NRS.
  - Standard industry ~~practice, is~~ practice, is that industry does not supply grain that does not comply with legislated requirements. Hence in the situation where the NRS advises a marketer/exporter that the grain consignment contains a chemical residue in contravention of an importing country MRL, the marketer/exporter is required to undertake remedial action, generally being diverting the cargo to an alternative market.
  - Should the need arise, the NRS Grains Program includes a traceback investigation function which allows government officers, in cooperation with the relevant grain company, to conduct an examination of any residue detection in grain over the MRL. The investigators trace the grain

sample back through grain handler to the property of origin to determine the cause of the residue violation.

c) Mis-Use of a Chemical

- Where industry detects the mis-use of a chemical, industry is required under the Code of Practice to report that mis-use to the relevant authority.

The relevant authorities are as listed below:

*APVMA*

For reporting of chemicals that do not have an APVMA ~~or NRA~~ registration number on the product, meaning they are not allowed to be used in Australia. For example, a chemical residue is detected for which there is no MRL (and thus registered use) in Australia. <http://apvma.gov.au/node/18506>

*States and Territories*

The following link provides general contacts for each State and Territory. <http://apvma.gov.au/node/3190>

For specific State contacts, refer to the following:

- NSW – Environment and Heritage is responsible for review of chemical mis-use  
<http://www.epa.nsw.gov.au/pesticides/pestmisuse.htm>
- QLD – Biosecurity Queensland is responsible for review of chemical mis-use  
<https://www.business.qld.gov.au/industry/agriculture/land-management/chemical-controls/spray-drift-issues/who-report-spray-drift>
- SA – PIRSA is responsible for review of chemical mis-use.  
[http://www.pir.sa.gov.au/biosecuritysa/ruralchem/chemical\\_misuse\\_including\\_spray\\_drift](http://www.pir.sa.gov.au/biosecuritysa/ruralchem/chemical_misuse_including_spray_drift)
- TAS – Department of Primary Industries, Parks, Water and Environment is responsible for review of chemical mis-use <http://dpi.pwe.tas.gov.au/agriculture/agvet-chemicals/AqVet-Chemicals-Contacts>
- VIC – “DEPI” is responsible for investigating any Victorian residue violations detected through the NRS Plant Program <http://www.depi.vic.gov.au/agriculture-and-food/farm-management/chemical-use/agricultural-chemical-use/produce-monitoring-programs>
- WA – Department of Agriculture and Food, Western Australia is responsible for review of chemical mis-use <https://www.agric.wa.gov.au/plant-biosecurity/chemical-residues-crops>

*NRS* <https://www.agriculture.gov.au/agriculture-land/farm-food-drought/food/nrs/contact>

*DAFF Plant Exports Branch* <https://www.agriculture.gov.au/about/contact/phone/plant-exports>

For atmospheric chemical violations, external reporting should be considered where:

- Suspected chemical misuse exists.
- There is evidence of repeated non-compliance.
- Public health risks may exist, worker safety has been significantly compromised, or legislative breaches appear evident. Minor first-time incidents resulting from ventilation failures or similar accidental causes would normally be managed through documented corrective actions, supplier education and internal records rather than external reporting, unless otherwise required by law or company procedure.

### 2.5.32.7.3 Follow Up Actions

Following advice of a chemical -residue violation and resolution of the incident, a number of steps should be taken to prevent further occurrence of incidents.

Initially, the grain being supplied to the market that contains inappropriate chemical residues must be diverted to another market, or measures should be taken to reduce the chemical residue level to a level which is compliant with the market requirement. In such instances, it is also preferable for the marketer/exporter to advise the NRS of the remedial action taken. This will assist in their investigation and reporting needs.

Future remedial actions may include:

- Reviewing the contract with relevant parties to determine roles and responsibilities. This may include:
  - Ensuring the contract clearly stipulates quality requirements of all parties when grain ownership changes hands; and
  - Ensuring the quality of grain is validated when grain ownership changes hands. Depending on the end-use of the grain, the quality to be declared or required will vary but may include confirmation of the quality via
    - A Commodity Vendor Declaration (CVD);
    - Sampling/testing; and
    - Provision of analytical results and/or samples.
- Reviewing the further use of supply chain participants who led to the initial issue
- Considering changes to existing sampling and testing arrangements. This may include:
  - Increasing surveillance such as additional sampling and testing; and
  - Reducing levels of detection for those chemicals of interest.
- Conducting a risk management of the market to determine if risks of supplying that market are excessive;
- Determining if alternative suitable tools to minimise risks are being used e.g., CVDs;
- Reviewing if training may assist to mitigate risks; and
- Determining if information available to assist minimising risk is being used. This may include:
  - The Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances for the applicable season;
  - MRL databases to keep up to date with MRL changes and how those regulations are applied in each market; and
  - External experts.

For atmospheric incidents, corrective actions may include:

- Refresher training.
- Improved fumigation practices.
- Improved ventilation procedures.
- Follow-up monitoring.
- Audit of fumigation records.
- Enhanced testing and monitoring equipment changes (purchase more sensitive or different equipment, calibration etc).
- Increased inspection frequency.
- Formal corrective action plans, and
- Referral to relevant authorities and suspension of supply arrangements where warranted.

### 2.62.8 Who is Responsible for Reporting?

While not legislated, compliance with the Australian Grain Industry Code of Practice requires that those parties aware of the chemical misuse report that incident to the relevant authorities. Failure to report the misuse means that industry stakeholder is non-compliant with the Code of Practice. In addition, if the mis-use is not reported, there remains limited incentive to the stakeholder responsible for the chemical mis-use to change their behaviour.

Where atmospheric exceedances indicate suspected misuse, repeated non-compliance or serious safety risk, the business detecting the issue should ensure the incident is escalated internally and considered for reporting in accordance with legislative, Code of Practice, contractual, site and industry requirements.

### 3. Examples of Violations & Mis-Use of Chemicals

The following are examples of the mis-use of chemicals where reporting to relevant authorities is required:

| Chemical             | Incident Type                                                             | Nature of Misuse                                               |
|----------------------|---------------------------------------------------------------------------|----------------------------------------------------------------|
| Any                  | Chemical residues detected when no treatment was certified                | Treatment potentially occurred via an unauthorised person      |
| Any                  | Chemical residues detected when no MRL exists and/or no label rate exists | Treatment not in compliance with registration of that chemical |
| Fumigant             | Fumigant visually observed in transport vehicle                           | Fumigation in-transit not permitted                            |
| Fumigant             | Fumigant detected at levels above the threshold limit value               | Fumigation in-transit not permitted                            |
| Fumigant - Phosphine | Fumigant tables and/or pellets observed admixed with grain                | Label violated as admixture not permitted on the label         |

A number of incidents regarding chemical violations may arise that may or may not require reporting to relevant authorities. In general, these are handled on a commercial basis between the relevant parties:

| Chemical | Incident Type                                           | Nature of Violation                                                          |
|----------|---------------------------------------------------------|------------------------------------------------------------------------------|
| Any      | Chemical residues detected above contract limit         | Inadequate control of treatment, incorrect grain allocated/supplied          |
| Any      | Chemical residues detected above ROL                    | Inadequate control of treatment                                              |
| Any      | Chemical residues detected when not declared on the CVD | Improper use of the CVD and incorrect declaration                            |
| Any      | Chemical residues detected when not declared on the CVD | Inadequate controls in place to prevent contamination through infrastructure |

### 4. Atmospheric Chemical Violations in Grain Transport Units

#### 4.1 Purpose and Scope

This section provides additional guidance for grain transport units found to contain atmospheric chemical concentrations exceeding applicable regulatory, workplace health and safety, customer, market access or industry requirements. Examples include phosphine residues detected in or near grain or atmospheric concentrations, other fumigant gases and chemical detections identified through receipt testing or monitoring.

#### 4.2 Principles

- Safety First: personnel safety is the first priority and access should be restricted until safe levels are achieved.
- No Outturn of Non-Compliant Grain: grain that does not comply with applicable requirements must not enter the supply chain until compliance is demonstrated.
- Every company must have a documented policy to manage compliance with worker exposure regulations when handling grain.
- Investigation and Corrective Action: incidents should be recorded and investigated sufficiently to determine the likely cause, responsible supply chain point, required corrective actions and measures to prevent recurrence.
- Proportionate Response: responses should reflect the magnitude of exceedance, evidence of accidental error versus misuse, public health and worker safety risk, and repeat occurrence.

#### 4.3 Incident Categories

The following incident categories determine whether rejection or acceptance of grain will occur, at some point in time following detection of an atmospheric chemical concentration in excess of requirements.

The purpose of the incident categories is to provide guidance for managing the detection of phosphine or another fumigant in or around grain transport units at receipt or handling points. This guidance does not prescribe a grain acceptance limit or replace:

- applicable workplace exposure limits;
- work health and safety legislation;
- approved chemical label directions;
- environmental or dangerous-goods requirements;
- site-specific risk assessments and safe-work procedures;
- contractual specifications; or
- directions issued by a regulator or emergency service.

| Category                                 | Examples                                                                                                                                                                                                                             | Characteristics                                                                                                                                                                                |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Category 1: Minor Incident</u>        | <u>Slight exceedance of atmospheric phosphine limits; evidence of insufficient ventilation after fumigation; potential desorption, administrative or handling errors; first occurrence.</u>                                          | <u>No indication of deliberate misuse; corrective action readily available; low risk of recurrence.</u><br><br><u>As industry guidance, residue levels &lt;1ppm for phosphine/phosphume</u>    |
| <u>Category 2: Significant Violation</u> | <u>Substantially elevated phosphine levels; repeated exceedances from the same supplier; failure to follow label instructions; evidence of poor fumigation practices; potentially moderate safety risk to workers or the public.</u> | <u>Moderate compliance concern; requires formal investigation and documented corrective actions.</u><br><br><u>As industry guidance, residue levels are &gt;1-3ppm for phosphine/phosphume</u> |

|                                                       |                                                                                                                                                                                                               |                                                                                                                                                                                                       |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Category 3: Suspected Misuse or Serious Breach</u> | <u>Extremely high concentrations; evidence suggesting illegal use practices; intentional disregard of label directions; multiple repeat incidents; potentially high safety risk to workers or the public.</u> | <u>Significant compliance concern; escalation and formal reporting should be <del>considered</del> conducted.</u><br><br><u>As industry guidance, residue levels &gt;3ppm for phosphine/phosphume</u> |
|-------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### **4.4 Operational Response**

Where a transport unit is identified with atmospheric chemical concentrations above applicable limits:

##### Step 1 – Secure and Isolate

- Suspend unloading or other activities associated with the load e.g., grain assessment.
- Isolate the vehicle or transport unit (exclusion zone) as per company policy.
- Restrict access to authorised personnel, including instructions for the driver of the vehicle.
- Apply workplace safety controls.

##### Step 2 – Verify the Result

- Conduct confirmatory testing where practical.
- Ensure testing equipment is calibrated.
- Record date and time, location, vehicle identification, supplier details, test methodology and results.

##### Step 3 – Determine Initial Risk Category

The receiving business should classify the incident as Category 1, 2 or 3 based on severity and circumstances.

##### Step 4 – Manage the Grain

- Ventilation and re-testing.
- Return of the load to the supplier when safe to do so, and in compliance with any Chain of Responsibility regulations and due diligence.
- Segregation and quarantine.
- Further residue testing.
- Disposal or alternative management where required.

The grain must not enter normal commerce until compliance has been demonstrated.

##### Step 5 – Investigation

The receiving business should undertake an investigation that considers recent fumigation history, product used, application method, exposure period, ventilation process, transport arrangements and previous incidents involving the supplier. Findings should be documented. Where required, a review of company policies should occur, including any training of personnel.

#### **4.5 Internal and Regulatory Reporting**

All chemical violations should be recorded in the company's incident management system, subject to management review and retained for trend analysis. That policy should include an understanding of the relevant State/Territory reporting requirements and incident management where relevant.

Regulatory reporting should be considered where suspected chemical misuse exists, there is evidence of repeated non-compliance, public health risks may exist, worker safety has been significantly compromised, or legislative breaches appear evident.

Routine minor first-time incidents resulting from ventilation failures or similar accidental causes would normally be managed through documented corrective actions rather than external reporting, unless otherwise required.

#### **4.6 Supplier Notification and Corrective Actions**

Where a violation is identified, the supplier should receive details of the test results, an explanation of non-compliance, required corrective actions and educational materials where appropriate. Corrective actions may include refresher training, improved fumigation practices, improved ventilation procedures, follow-up monitoring and audit of fumigation records.

Where multiple incidents occur involving the same supplier or business, additional actions may include enhanced testing, increased inspection frequency, formal corrective action plans, referral to relevant authorities and suspension of supply arrangements where warranted.

#### **4.7 Industry Review**

Industry bodies should periodically review incident numbers, root causes, repeat offender trends, effectiveness of corrective actions and opportunities for education and extension programs. Annual de-identified reporting should be considered to demonstrate industry stewardship and continuous improvement.

A practical compromise may be minor and isolated phosphine exceedances resulting from inadequate ventilation are managed through documented corrective action and education, while significant, repeated or suspected misuse incidents are subject to formal industry reporting and potential referral to the appropriate regulatory authority.

This approach avoids over-reporting genuine mistakes while creating clear consequences for poor or unlawful practices and demonstrates responsible industry stewardship ahead of anticipated phosphine label and Safe Work Australia changes.

#### **4.5. Further Information**

- An Australian Approach to chemical residue management in grains - Programs and results  
<http://spiru.cqahr.ksu.edu/proj/iwcsp/pdf2/9/6324.pdf>
- Managing chemical cross contamination risks  
<http://www.depi.vic.gov.au/agriculture-and-food/farm-management/chemical-use/agricultural-chemical-use/chemical-residues/managing-chemical-residues-in-crops-and-produce/managing-chemical-cross-contamination-risks>
- Strategy to manage resistance to grain protection treatments in the Australian grain industry  
[www.crcplantbiosecurity.com.au](http://www.crcplantbiosecurity.com.au) or <http://www.graintrade.org.au/nwpgp>
- The Australian Grains Industry Post Harvest Chemical Usage Recommendations and Outturn Tolerances for the applicable season <http://www.graintrade.org.au/nwpgp>

- The Grain Industry Code of Practice for the Management of Grain along the Supply Chain  
<http://www.graintrade.org.au/grain-industry-codes>