Environmental Protection Authority
Te Mana Rauhī Taiao

DECISION

23 December 2011

Application code	ERMA200926
Application type	Application for the amendment of various approvals under section 63A of the Hazardous Substances and New Organisms Act 1996 ("the Act")
Applicant	Chief Executive of the Environmental Protection Authority ("the EPA")
Date application received	10 October 2011
Submission period	10 October 2011 to 23 November 2011
Considered by	The Environmental Protection Authority
Purpose of the application	To amend the classifications and controls of the substances listed in the application as part of the 2011 Yearly Chemical Review.

1. Summary of Application

1.1. From time to time, the EPA discovers, or has brought to its attention, errors, or inconsistencies in substance classifications or new information that requires classifications or controls to be amended.

1.2. In order to assist industry in avoiding a constant flow of changes throughout the year and with an aim of improving communication with stakeholders over changes proposed under this application, the EPA intends that this process will be by way of "modified" reassessment, on a regular basis, under section 63A for the changes which are more than "minor" and so not able to be made under section 67A.

1.3. The purpose of this reassessment is to correct inconsistencies and omissions in the classifications of or reclassify, the substances set out in **Appendix 2** and **Appendix 3**, to reflect new information or data, or to align with internationally accepted data.

2. Decision

2.1. The EPA gives the substances new hazard classifications under section 77(1), as specified in **Appendix 2** and **Appendix 3**.

2.2. Subject to paragraph 2.3, in accordance with section 77(2), the controls prescribed for each hazard classification shall attach to the substances.

2.3. In accordance with section 77A(1), a stationary container system, secondary containment system, tank wagon, place of storage, or place of use that immediately before the date of this decision was:

a. being used to contain, transport or store a substance described in **Appendix 2** or **Appendix 3**, or for products containing substances listed in **Appendix 2**; or

b. designed to be used to contain, transport or store the substance and construction of the stationary container system, secondary containment system, tank wagon, place of storage or place of use to that design had commenced;

is not required to comply with a control prescribed for a hazard classification that attaches to a substance if:

i. it meets the requirements of a compliance plan approved by the EPA for that stationary container system, secondary containment system, tank wagon, place of storage, or place of use; and

ii. the stationary container system, secondary containment system, tank wagon, place of storage, or place of use has a current test certificate certifying that it meets the requirements of (i) above.

2.4. These requirements will come into effect one year after the date of this decision.

3. Process

3.1. The application for a "modified" reassessment under section 63A was prepared by the Chief Executive of the EPA following grounds for reassessment having been established under section 62 by the EPA in its decision 30 June 2011.

3.2. The application has been considered in accordance with section 63A as:

3.2.1. The reassessment considers only the specific aspect of each approval that is outlined in **Appendix 2** and **Appendix 3**; and

3.2.2. The proposed changes are considered to be more than "minor in effect" for the following reasons:

a. all the proposed changes may result in some costs for industry particularly for companies which have many products affected by the changes;

b. there is no requirement for industry to register products covered by individual approvals or group standard approvals with the EPA. Therefore, the EPA does not know who the affected parties with respect to amendment of classifications for chemical substances are. It is noted that a number of the substances (for example, methanol) with proposed changes are widely used and are found in many products;

c. some changes of classification result in the need for changes to safety data sheets and labelling requirements. Amendment of classifications by section 67A does not allow for time to implement these changes. As part of this reassessment the EPA proposes a phase in period for implementing any resulting control and information changes; and

d. some of the changes are to remove controls. It is important that this is done using a public process.

3.3. Section 63A(6) allows the EPA to approve or decline an application for reassessment under section 63A as it considers appropriate after taking into account:

a. all the effects associated with the reassessment; and

b. the best international practices and standards for the safe management of hazardous substances.

3.4. Under section 63A(3), the application for reassessment was deemed to be an application made under section 29. Section 29 requires the EPA to consider adverse and positive effects of a substance and to make a decision based on whether or not the positive effects of the substance outweigh the adverse effects of the substance.

3.5. Due to the wide implications and the range of substances being reassessed under this application, the Chief Executive chose to publicly notify this application. Three submissions were received and the issues raised in these submissions have been taken into consideration in making this decision.

3.6. The submissions indicate that there may be significant affects related to the addition of a 5.1.1C (oxidising) classification to 65-70% Nitric acid aqueous solutions, therefore, the consideration of the addition of a 5.1.1C (oxidising) classification to this substance has been postponed to enable additional information to be obtained under section 58(1)(a) of the Act.

3.7. In making this decision the EPA has applied the relevant sections of the Act and followed the relevant provisions of the Hazardous Substances and New Organisms (Methodology) Order 1998 ("the Methodology") as detailed in the decision path set out in **Appendix 1** to this decision.

3.8. Reference made to a section in this document means that section of the Act, reference to a clause refers to the relevant clause in the Methodology.

4. Consideration

Evaluation of the risks costs and benefits

4.1. The modified reassessment seeks to amend classifications and controls to better manage the hazards/risks of the substances listed in **Appendix 2** and **Appendix 3**.

4.2. Each change will have different costs and benefits associated with the change. For instance, the addition of a hazard that makes the substance a dangerous good (DG) (as prescribed in the UN Model Regulations for the Transportation of Dangerous Goods[1]) may have a significant effect on the management of the substance. In most cases, where the proposed change will result in the substance becoming regulated as a DG, the substance will already be handled as a DG internationally.

4.3. However, where the proposed change is to remove a minor classification, such as irritancy, where the substance has other toxicity classifications, no change in controls other than labelling and documentation is required.

[1] http://live.unece.org/trans/danger/publi/unrec/rev17/17files_e.html

4.4. In some cases the removal of a classification will result in the removal of controls. This may result in a significant reduction in compliance costs.

4.5. The main benefit of making the changes listed in **Appendix 2** and **Appendix 3** is to ensure consistency within the HSNO classification system and secondly where appropriate (i.e where there are sufficient data to support), with internationally accepted classifications.

4.6. The EPA has taken into account the effects associated with the reassessment and best international practices and standards. The EPA considers the revised classifications to more accurately represent the hazards of the substances and the controls are more appropriate to manage the risks of the substances. Thus, the listed changes will improve the effective management of the substances. These changes also represent an attempt at alignment with internationally accepted classification.

Revised classifications and controls

4.7. Having considered the risks, costs and benefits of the amendment proposals, the EPA has given the substances the hazard classifications specified in **Appendix 2** and **Appendix 3**.

4.8. Subject to paragraph 5.2 the controls prescribed for each hazard classification shall attach to the substances.

4.9. For the substances listed in **Appendix 2** and **Appendix 3**, and for products containing substances listed in **Appendix 2**, the EPA recognises that a reasonable period of time should be allowed in which to comply with the proposed new classifications and controls. The EPA therefore has decided that a transitional (phase-in) period of 1 year should be allowed in which to implement any changes approved by the EPA.

4.10. The EPA has decided that, where major infrastructure upgrades or investments are required as a consequence of this application, a compliance plan may be submitted to extend the phase in period. The compliance plan is to be submitted within 1 year of the changes being approved.

4.11. Under section 77A, additional controls may be added but the EPA must be satisfied that the criteria set out in section 77A(4) are met. By allowing a phase in period and the option for submission of a compliance plan the EPA considers it more likely that compliance with the new controls will be met and that consistency with the controls on existing substances will occur. As the new controls are more likely to achieve compliance this will lead to the more effective management of the listed substances.

4.12. Accordingly, the EPA considers that it will consider approval of a compliance plan that allows for a period of non-compliance with one or more of the following prescribed controls:

- Stationary container systems (Schedule 8, Gazette Notice 35 2004);
- Secondary containment (Regulations 38, 39 and 40 of the Hazardous Substances (Emergency Management) Regulations 2001; Clauses 1 and 2 of Schedule 9 Gazette Notice 35 2004; the variation made in Schedule 7, Gazette Notice 35 2004 to the regulation 38 of the Hazardous Substances (Emergency Management) Regulations 2001);
- Tank wagons (Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004);

- Schedule 10, Gazette Notice 35 2004; Regulations 71-106 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001; and
- Site and storage group standard conditions of any of the above.

4.13. A compliance plan submitted for approval by the EPA should set out:

i. a proposed programme for extending the time by which the controls listed in paragraph 4.12 will be complied with; and/or

ii. proposed variations to the requirements of the controls listed in paragraph 4.12.

5. Conclusions

5.1. Pursuant to section 63A(6) the EPA determines that in accordance with section 29 and clause 27,

5.1.1. the substances are given the hazard classifications under section 77(1), as specified in **Appendix 2** and **Appendix 3**; and

5.1.2. subject to paragraph 5.2 in accordance with section 77(2), the controls prescribed for each hazard classification shall attach to the substance.

5.2. In accordance with section 77A(1), a stationary container system, secondary containment system, tank wagon, place of storage, or place of use that immediately before the date of this decision was:

a. being used to contain, transport or store a substance described in **Appendix 2** or **Appendix 3**, or for products containing substances listed in **Appendix 2**; or

b. designed to be used to contain, transport or store the substance and construction of the stationary container system, secondary containment system, tank wagon, place of storage or place of use to that design had commenced;

is not required to comply with a control prescribed for a hazard classification that attaches to a substance if:

i. it meets the requirements of a compliance plan approved by the EPA for that stationary container system, secondary containment system, tank wagon, place of storage, or place of use; and

ii. the stationary container system, secondary containment system, tank wagon, place of storage, or place of use has a current test certificate certifying that it meets the requirements of (i) above.

5.3. The EPA will consider approval of a compliance plan that allows for a period of non-compliance with one or more of the following prescribed controls:

- Stationary container systems (Schedule 8, Gazette Notice 35 2004);
- Secondary containment (Regulations 38, 39 and 40 of the Hazardous Substances (Emergency Management) Regulations 2001; Clauses 1 and 2 of Schedule 9 Gazette Notice 35 2004; the variation made in Schedule 7, Gazette Notice 35 2004 to the regulation 38 of the Hazardous Substances (Emergency Management) Regulations 2001);
- Tank wagons (Hazardous Substances (Tank Wagons and Transportable Containers) Regulations 2004);
- Schedule 10, Gazette Notice 35 2004; Regulations 71-106 of the Hazardous Substances (Classes 1 to 5 Controls) Regulations 2001; and

- Site and storage group standard conditions of any of the above.

5.4. These requirements will come into effect one year after the date of this decision.

5.5. The consideration of the addition of a 5.1.1C (oxidising) classification to 65-70% Nitric acid aqueous solutions has been postponed to enable additional information to be obtained under section 58(1)(a).

5.6. In accordance with clause 36(2)(b), the EPA records that, in reaching these conclusions, it has applied the balancing tests in section 29 and clauses 26 and 27 and has also applied the relevant criteria in the decision path set out in the **Appendix 1** to this decision.

Helen Atkins Date: 23 December 2011

Chair

Appendix 1: Decision path for reassessment of hazardous substances

Context

This decision path describes the decision-making process for applications to modify an approval to import or manufacture a hazardous substance under section 63A of the HSNO Act.

Introduction

The purpose of the decision path is to provide the EPA with guidance so that all relevant matters in the HSNO Act and the Methodology have been addressed. It does not attempt to direct the weighting that the EPA may decide to make on individual aspects of an application.

In this document 'section' refers to sections of the HSNO Act, and 'clause' refers to clauses of the EPA Methodology.

The decision path has two parts –

- **Flowchart** (a logic diagram showing the process prescribed in the Methodology and the HSNO Act to be followed in making a decision), and
- **Explanatory notes** (discussion of each step of the process).

Of necessity the words in the boxes in the flowchart are brief, and key words are used to summarise the activity required. The explanatory notes provide a comprehensive description of each of the numbered items in the flowchart, and describe the processes that should be followed to achieve the described outcome.

Decision path for modified reassessment for amendments to hazardous substance approvals: application made and determined under section 63A.

For proper interpretation of the decision path it is important to work through the flowchart in conjunction with the explanatory notes.

Figure updated: July 2011

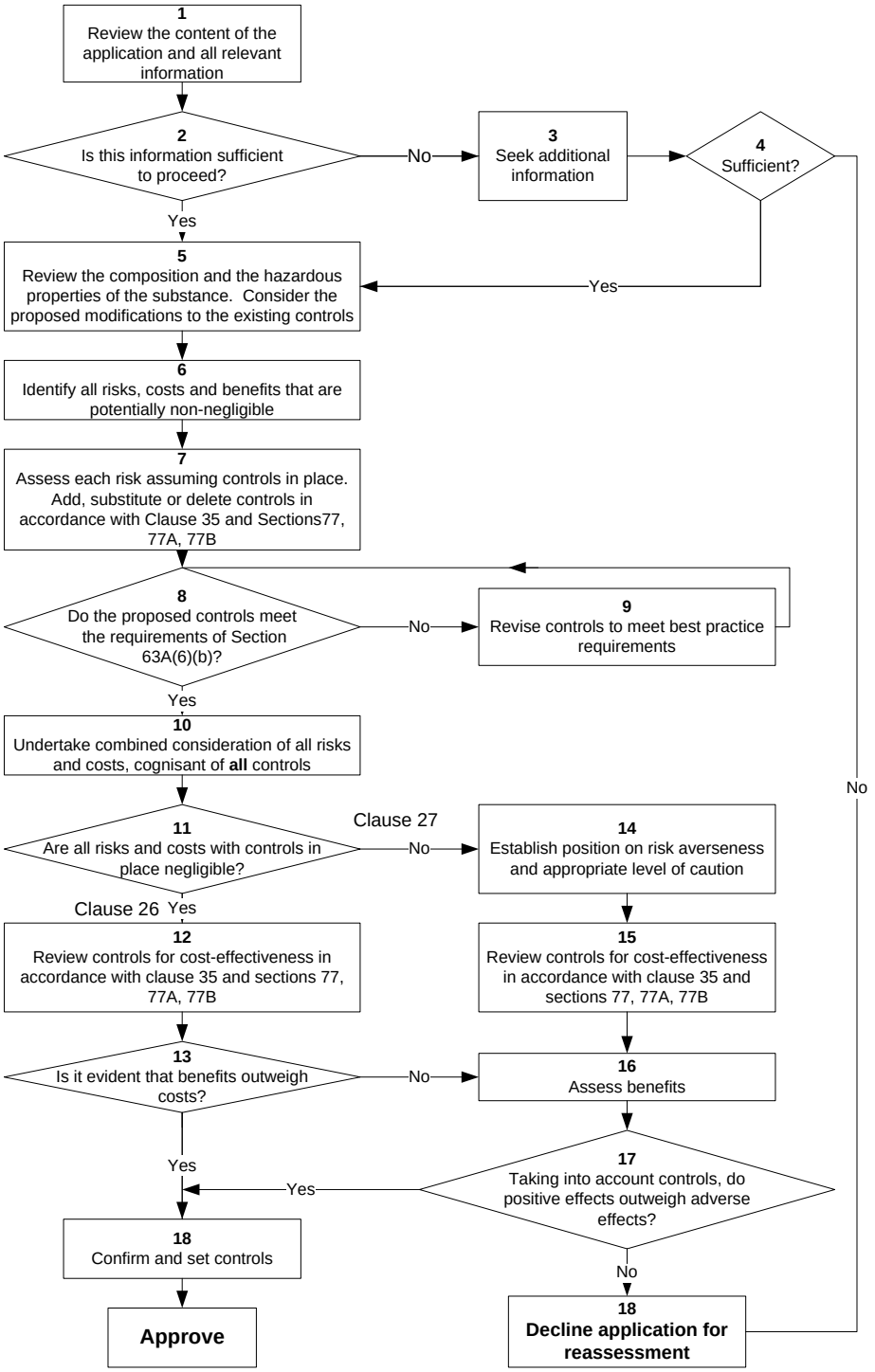


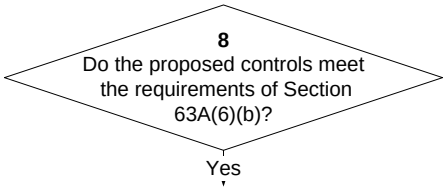
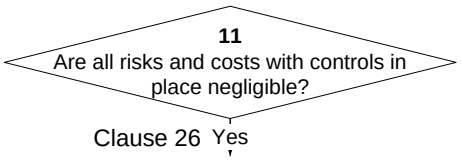
Figure 1: Explanatory Notes

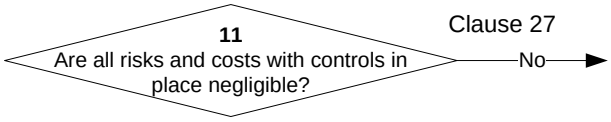
Item 1:	**Review the content of the application and all relevant information** Review the application, the E&R Report, and information received from experts and that provided in submissions (where relevant) in terms of section 28(2) of the Act and clauses 8, 15, 16 and 20 of the Methodology. While section 63A is not mentioned in section 53 (public notification), sections 63A(4) and (5) provide discretion for the HSNO decision maker to consider public notification (cf section 53(2)) and guidance re consultation where an application is not publicly notified.
Item 2:	**Is this information sufficient to proceed?** Review the information and determine whether or not there is sufficient information available to make a decision.
Item 3:	**(if 'no') Seek additional information** If there is not sufficient information then additional information may need to be sought under section 52 or 58 of the Act. If the applicant is not able to provide sufficient information for consideration then the application is not approved. In these circumstances the HSNO decision maker may choose to decline the application, or the application may lapse.
Item 4	**Sufficient?** When additional information has been sought, has this been provided, and is there now sufficient information available to make a decision? If the HSNO decision maker is not satisfied that it has sufficient information for consideration, then the application for reassessment must be declined (see item 18).
Item 5:	**(if 'yes' from item 2 or from item 4) Review the composition and the hazardous properties of the substance, and the proposed modifications to the existing controls** Review the composition of the substance, its hazardous properties, and the existing suite of controls on the substance. The level of detail for this review will depend on the nature of the application for modified reassessment. In most cases a detailed review will not be required. Consider the proposed modifications to the existing controls.
Item 6:	**Identify all risks, costs and benefits that are potentially non-negligible**[2] The modified reassessment process concentrates on a specific aspect of the approval (section 63A(1)(a)). All risks, costs and benefits that are potentially non-negligible need to be identified. However, emphasis should be placed on effects that are expected to change as a result of the proposed changes to controls. Costs and benefits are defined in the Methodology as the value of particular effects. However, in most cases these 'values' are not certain and have a likelihood attached to them. Thus costs and risks are generally synonymous and may be addressed together. Examples of costs that cannot be considered as risks are one-off direct financial costs incurred by applicants that cannot be considered as 'sunk' costs (see footnote 1). Where such costs arise they will considered in the same way as risks, but their likelihood of occurrence will be more certain. Identification is a two-step process that scopes the range of possible effects (risks, costs **and**

[2] Relevant effects are **marginal effects**, or the changes that will occur as a result of the substance being available. Financial costs associated with preparing and submitting an application are not marginal effects and are not effects of the substance(s) and are therefore not taken into account in weighing up adverse and positive effects. These latter types of costs are sometimes called 'sunk' costs since they are incurred whether or not the application is successful.

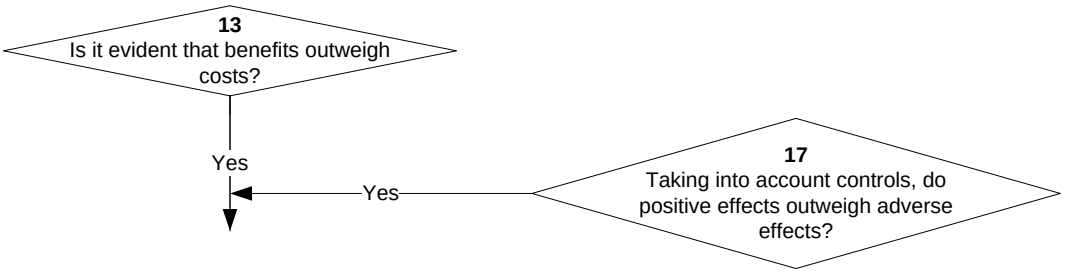
	benefits).	
	Step 1:	Identify all possible risks and costs (adverse effects) and benefits (positive effects) associated with the approval of the substance(s), and based on the range of areas of impact described in clause 9 of the Methodology and sections 5 and 6 of the Act[3]. Consider the effects of the substance through its lifecycle (clause 11) and include the likely effects of the substance being unavailable (sections 29(1)(a)(iii) and 29(1)(b)(iii)). Relevant costs and benefits are those that relate to New Zealand and those that would arise as a consequence of approving the application (clause 14). Consider short term and long term effects. Identify situations where risks and costs occur in one area of impact or affect one sector and benefits accrue to another area or sector; that is, situations where risks and costs do not have corresponding benefits.
	Step 2:	Document those risks, costs and benefits that can be readily concluded to be negligible[4], and eliminate them from further consideration. Note that where there are costs that are not associated with risks some of them may be eliminated at this scoping stage on the basis that the financial cost represented is very small and there is no overall effect on the market economy.
Item 7:	**Assess each risk assuming controls in place. Add, substitute or delete controls in accordance with clause 35 and sections 77, 77A and 77B of the Act.** The assessment of potentially non-negligible risks and costs should be carried out in accordance with clauses 12, 13, 15, 22, 24, 25, and 29 to 32 of the Methodology. The assessment is carried out with the default controls in place. Assess each potentially non-negligible risk and cost estimating the magnitude of the effect if it should occur and the likelihood of its occurring. Where there are non-negligible financial costs that are not associated with risks then the probability of occurrence (likelihood) may be close to 1. Relevant information provided in submissions should be taken into account. The distribution of risks and costs should be considered, including geographical distribution and distribution over groups in the community, as well as distribution over time. This information should be retained with the assessed level of risk/cost. This assessment includes consideration of how cautious the HSNO decision maker will be in the face of uncertainty (section 7). Where there is uncertainty, it may be necessary to estimate scenarios for lower and upper bounds for the adverse effect as a means of identifying the range of uncertainty (clause 32). It is also important to bear in mind the materiality of the uncertainty and how significant the uncertainty is for the decision (clause 29(a)). Consider the HSNO decision maker's approach to risk (clause 33 of the Methodology) or how risk averse the HSNO decision maker should be in giving weight to the residual risk, where residual risk is the risk remaining after the imposition of controls. See EPA report 'Approach to Risk' for further guidance[5]. Where it is clear that residual risks are non-negligible and where appropriate controls are available, add substitute or delete controls in accordance with sections 77 and 77A of the Act to reduce the residual risk to a tolerable level. If the substance has toxic or ecotoxic properties,	

[3] Effects on the natural environment, effects on human health and safety, effects on Maori culture and traditions, effects on society and community, effects on the market economy.
[4] Negligible effects are defined in the Annotated Methodology as "Risks which are of such little significance in terms of their likelihood and effect that they do not require active management and/or after the application of risk management can be justified by very small levels of benefits.
[5] http://www.epa.govt.nz/Publications/Approach-to-Risk.pdf

	consider setting exposure limits under section 77B. While clause 35 is relevant here, in terms of considering the costs and benefits of changing the controls, it has more prominence in items 12 and 15. If changes are made to the controls at this stage then the approach to uncertainty and the approach to risk must be revisited.
Item 8:	**Do the proposed controls meet the requirements of Section 63A(6)(b)?** Consider whether the proposed controls meet best international practices and standards for the safe management of hazardous substances. This includes the full suite of proposed controls including existing controls and modified controls.
Item 9:	**(if 'no' from item 8) Revise controls to meet best practice requirements** If the controls do not meet the best international practice criteria, then modify the controls so that they do meet them.
Item 10:	 **(if 'yes' from item 8) Undertake combined consideration of all risks and costs, cognisant of proposed controls** Once the risks and costs have been assessed individually consider all risks and costs together as a 'basket' of risks/costs. If it is feasible and/or appropriate, this may involve combining groups of risks and costs as for Clause 34 of the Methodology. The purpose of this step is to consider synergistic effects and determine whether these may change the level of individual risks.
Item 11:	**Are all risks and costs with controls in place negligible?** Looking at individual risks in the context of the 'basket' of risks, consider whether any of the residual risks (costs) are negligible.
Item 12:	 **(if 'yes' from item 11) Review controls for cost-effectiveness in accordance with clause 35 and sections 77, 77A and 77B** Where all risks are negligible the decision must be made under clause 26 of the Methodology. Consider the cost-effectiveness of the proposed individual controls and exposure limits. Where relevant and appropriate, add, substitute or delete controls whilst taking into account the view of the applicant, and the cost-effectiveness of the full package of controls.
Item 13:	**Is it evident that benefits outweigh costs?** Risks have already been determined to be negligible (item 9). In the unusual circumstance where there are non-negligible costs that are not associated with risks they have been assessed in item 7. Costs are made up of two components: internal costs or those that accrue to the applicant, and external costs or those that accrue to the wider community.

	Consider whether there are any non-negligible external costs that are not associated with risks. If there are no external non-negligible costs then external benefits outweigh external costs. The fact that the application has been submitted is deemed to demonstrate existence of internal or private net benefit, and therefore total benefits outweigh total costs[6]. As indicated above, where risks are deemed to be negligible, and the only identifiable costs resulting from approving an application are shown to accrue to the applicant, then a cost-benefit analysis will not be required. The act of an application being lodged will be deemed by the HSNO decision maker to indicate that the applicant believes the benefits to be greater than the costs. However, if this is not the case and there are external non-negligible costs then all benefits need to be assessed (via item 16).
	
Item 14:	**(if 'no' from item 10) Establish HSNO decision maker's position on risk averseness and appropriate level of caution** Although 'risk averseness' (approach to risk, clause 33) is considered as a part of the assessment of individual risks, it is good practice to consolidate the view on this if several risks are non-negligible. This consolidation also applies to the consideration of the approach to uncertainty (section 7).
Item 15:	**Review controls for cost-effectiveness in accordance with clause 35 and sections 77, 77A and 77B** This constitutes a decision made under clause 27 of the Methodology (taken in sequence from items 10, 13, 14 and 15). Consider (a) whether any of the non-negligible risks can be reduced by varying the controls in accordance with section 77 and 77A of the Act, and (b) the cost-effectiveness of the controls. Where relevant and appropriate, add, substitute or delete controls whilst taking into account the view of the applicant, and making sure that the benefits of doing so outweigh the costs. As for item 6, If the substance has toxic or ecotoxic properties, consider exposure limits under section 77B.
Item 16:	**(if 'no' from item 13, or in sequence from item 15) Assess benefits** Assess benefits or positive effects in terms of clause 13 of the Methodology. Since benefits are not certain, they are assessed in the same way as risks. Thus the assessment involves estimating the magnitude of the effect if it should occur and the likelihood of its occurring. This assessment also includes consideration of the HSNO decision maker's approach to uncertainty or how cautious the HSNO decision maker will be in the face of uncertainty (section 7). Where there is uncertainty, it may be necessary to estimate scenarios for lower and upper bounds for the positive effect. An understanding of the distributional implications of a proposal is an important part of any consideration of costs and benefits, and the distribution of benefits should be considered in the same way as for the distribution of risks and costs. The HSNO decision maker will in particular

[6]Technical Guide 'Decision making' section 4.9.3. Where risks are negligible and the costs accrue only to the applicant, no explicit cost benefit analysis is required. In effect, the HSNO decision maker takes the act of making an application as evidence that the benefits outweigh the costs. See also Protocol Series 1 'General requirements for the Identification and Assessment of Risks, Costs, and Benefits'

	look to identify those situations where the beneficiaries of an application are different from those who bear the costs[7]. This is important not only for reasons related to fairness but also in forming a view of just how robust any claim of an overall net benefit might be. It is much more difficult to sustain a claim of an overall net benefit if those who enjoy the benefits are different to those who will bear the costs. Thus where benefits accrue to one area or sector and risks and costs are borne by another area or sector then the HSNO decision maker may choose to be more risk averse and to place a higher weight on the risks and costs. As for risks and costs the assessment is carried out with the default controls in place.
Item 17:	**Taking into account controls, do positive effects outweigh adverse effects?** In weighing up positive and adverse effects, consider clause 34 of the Methodology. Where possible combine groups of risks, costs and benefits or use other techniques such as dominant risks and ranking of risks. The weighing up process takes into account controls proposed in items 5, 7 (9), 12 and/or 15. Where this item is taken in sequence from items 14, 15 and 16 (i.e. risks are not negligible) it constitutes a decision made under clause 27 of the Methodology. Where this item is taken in sequence from items 11, 12 and 13 (i.e. risks are negligible, and there are external or public costs) it constitutes a decision made under clause 26 of the Methodology.
Item 18:	**(if 'no' from item 4 or item 17) Decline application for reassessment** (from item 4) The Act is silent on the situation if there is insufficient information to consider the application. However, sections 55-61 (section 63A(3)) are deemed to hold, therefore the HSNO decision maker concludes that the application for reassessment may be declined if there is insufficient information. (from item 17) The HSNO decision maker may decline the application under section 63A(6) after taking into account the effects of the substance and best international practices and standards. Section 63A(2)(b) notes that this modified reassessment process cannot result in an approval to import or manufacture the substance being revoked. Therefore, if the process results in a 'decline' decision, then the result is that the modified reassessment of the substance is not approved, and the existing controls remain in force.
Item 19:	 **(if 'yes' from items 13 or 17) Confirm and set controls** Controls have been considered at the earlier stages of the process (items 5, 7 (9), 12 and/or 15). The final step in the decision-making process brings together all the proposed controls, and reviews them for overlaps, gaps and inconsistencies. Once these have been resolved the controls are confirmed.

[7] Clause 13 of the Methodology

Appendix 2 Substances for reassessment

Current classifications and proposed classifications are given. The schedule also includes the justification for the change and the controls affected by these changes.

Bold lettering indicates affected classifications.

More detailed information on the control codes can be found in the following documents;

- User guide to Controls: http://www.epa.govt.nz/Publications/ER-UG-05.pdf
- Hazardous Substances (Chemicals) Transfer Notice (GN72): http://www.epa.govt.nz/Publications/Transfer-Notice-35-2004.pdf,
- Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice (GN35): http://www.epa.govt.nz/Publications/Transfer-Notice-35-2004.pdf

<table>
<tr><th>Substances affected (Name and CAS #)</th><th>Approval Number</th><th>Current classification</th><th>New classification</th><th>Justification for Change</th><th>Effect on controls</th></tr>
<tr>
<td>4'-Aminopropiophenone (synonym PAPP)
CAS: 70-69-9</td>
<td>HSR006967</td>
<td>6.1C, 9.3B</td>
<td>6.1B, 6.9A, 9.3B</td>
<td>Change 6.1C to 6.1B. Add 6.9A
6.1 acute oral toxicity
SPECIES/STRAIN: Various see below
TEST SUBSTANCE: para- aminopropiophenone
DOSE LEVELS: Not stated. Dosed with a syringe
NO/SEX/GROUP: Various
ENDPOINT: Oral LD_{50}
The reported oral LD_{50} values were:
<table>
<tr><th>Species</th><th>Strain</th><th>Sex</th><th>LD_{50} value (mg/kg bw)</th></tr>
<tr><td>Rat</td><td>Albino</td><td>6 male/group</td><td>177 (in</td></tr>
</table>
</td>
<td>Controls to add based on addition of 6.1B and 6.9A
AH1, TR1
Delete variation codes 8,19 from Hazardous Substances (Chemicals) Transfer Notice 2006 (GN72)
Add variation code 9 from Hazardous Substances (Chemicals) Transfer Notice 2006 (GN72)
Note: PG2 is a default</td>
</tr>
</table>

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls

			PG[$])
Mice	Albino	10 male/group	233 (in PG[$])
Cat[#]	Domestic short hair	**3 (sex unspecified)/ group**	**5.6 (in 0.05% Carbopol 914)**

[#] The highlighted value is the value selected as the basis for classification.

[$] PG = Propylene glycol

GLP: No information

TEST GUIDELINES: No information

REFERENCE SOURCE: Savarie, P., Pan, H.P., Hayes, D.J., Roberts, J..D., Dasch, G.J., Felton, R., Schafer, E.W., (1983) Comparative acute oral toxicity of *para*-aminopropiophenone (PAPP) in mammals and birds. *Bulletin of Environmental Contamination Toxicology,* 30; 122-126.

RELIABILITY (KLIMISCH SCORE): 4

Rodents (particularly mice) are relatively insensitive to oxidative damage to erythrocytes. Particular consideration was given to the well established variability in human response. Persons with a genetic variation resulting in glucose-6-phosphate dehydrogenase (G-6 PD) deficiency will have increased susceptibility to PAPP compared with other humans. G-6-PD is common in humans (the most common inborn error of metabolism) with gene frequencies from 5-25% (discussed further under 6.9). Taking into account the uncertainty and

control for 6.1B. This control has not been applied as this would be inconsistent with the UNRTDG regulations which classify using rat data. This approach is consistent with that used for 1080 approvals where the 6.1 classification was based on dog data.

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				variability of human susceptibility, the classification is proposed on the basis of the **LD_{50} in the cat, 5.6 mg/kg bw**. **6.9 (single exposure)** The acute toxicity data and the mechanism of toxicity discussion, indicates that acute exposures to PAPP will produce biochemical and haematological changes in the blood, provided dose levels are high enough. Methaemoglobin production is the most sensitive biochemical marker while changes in blood cells occur after higher exposures. The Agency notes that many drugs that generate methaemoglobin also stimulate production of sulfhaemoglobin, a greenish haemoglobin derivative (Bhagavan, NV, 2002). Sulfur is bound covalently to the prophyrin ring. The studies on PAPP have not identified production of sulfhaemoglobin, but it is not clear whether the clinical test method would have detected its presence. It would be of importance because sulfhaemoglobin cannot be enzymatically converted back to functional haemoglobin, but needs to be replaced by erythropoiesis (a much slower process). Methaemoglobin occurs naturally at low levels in the human body. Methaemoglobin is able to be reduced by methamoglobin reductase to normal haemoglobin. Thus after exposure to a toxic, but not fatal dose of PAPP, it is likely that full recovery would occur. It is known that some individually will be more sensitive. This includes persons with metabolic abnormalitites causing greater sensitivity (vulnerability) to methaemoglobinemia. Such conditions are relatively common, specifically the glucose-6-phosphate dehydrogenase deficiency is the most common hereditary abnormality in humans [see discussion under Human Data below]. Also, infants under 6 months of age are particularly susceptible to methaemoglobinemia. Acquired factors can also contribute, such as using a nitrate contaminated drinking water	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				well sources, food stuffs, particular topical anesthetics containing benzocaine or prilocaine and other drugs. The most reliable data are those for human exposures which showed that for male, Caucasians, exposure to a single dose of 50, 80 or 100 mg PAPP was not associated with adverse effects other than a raised methaemoglobin level which persisted for at least 4 hours. While not clearly treatment-related two individuals dosed at 80 mg (equivalent to 0.8 and 1.2 mg/kg bw respectively) showed electrocardiogram (ECG) changes (Paulet, et al., 1963). When this is considered in relation to the User Guide (ERMA, 2008, p17-5 – 17-7), such changes could be considered biochemical changes which are reversible and of doubtful toxicological importance. However, they are effects in humans, and given the genetic diversity of response in the human population a precautionary approach is appropriate. *Conclusion*: It is appropriate to assign a classification of 6.9A for target organ toxicity from a single oral exposure based on these data. **6.9 (repeat exposure)** STUDY TYPE: 14 day rat study (with 14 day recovery period) DOSE LEVELS: 0, 35/20, 90/50, 140/130 mg/kg bw/day in males/females respectively. NOAEL: Not established LOAEL: 35 mg/kg bw/day in males and **20 mg/kg bw/day in females**, due to enlarged spleens, associated with erythroid hyperplasia, sinusoidal enlargement and pigment. [Reduced red	

<table>
<tr><th>Substances affected (Name and CAS #)</th><th>Approval Number</th><th>Current classification</th><th>New classification</th><th>Justification for Change</th><th>Effect on controls</th></tr>
<tr><td></td><td></td><td></td><td></td><td>blood cell count associated with increased packed cell volume and red cell haemoglogin were clearly evident in the mid dose groups. Raised methaemoglobin was seen at all dose levels. At the top dose (140 mg/kg bw/day in males and 130 mg/kg bw/day in females) pigment was also present in Kupffer cells of the liver and renal proximal tubular epithelial cells.]

STUDY TYPE: 14 day monkey study (with 14 day recovery period)

DOSE LEVELS: 0, 17, 50 and 150 mg/kg bw/day

REMARKS: Methaemoglobin was clearly raised at both 17 and 50 mg/kg bw/day, but the degree of elevation is of questionable clinical significance as the highest group mean at any time point was 5.1% on Day 14 (males) and 8.2 on Day 11 in females) at 50 mg/kg bw/day. None of these animals had concentrations above 10% at any time point. In the top dose groups the highest value was 31.6% in one male on Day 6 (the only value for males above 30%), while in females one animal had 3 readings in excess of 30% and was consistently higher than its peers.

The Heinz Body findings as set out below:

Heinz Body concentration (%) at Day 13
<table><tr><th>Group</th><th colspan="2">Males</th><th colspan="2">Females</th></tr><tr><th></th><th>Mean</th><th>SD</th><th>Mean</th><th>SD</th></tr><tr><td>Controls</td><td>0</td><td>0</td><td>0</td><td>0</td></tr><tr><td>17</td><td>0.8</td><td>1.4</td><td>2.5</td><td>4.4</td></tr><tr><td>50</td><td>15.4</td><td>13.3</td><td>27.8</td><td>20.0</td></tr><tr><td>150</td><td>12.3</td><td>4.3</td><td>20.6</td><td>14.7</td></tr></table></td><td></td></tr>
</table>

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				While the increase at 17 mg/kg bw/day is relatively small, an increase in Heinz Body formation occurred at this dose in respectively, 2 males and 3 females. NOAEL: Not established LOAEL: 17 mg/kg bw/day based on raised methaemoglobin concentrations, clinical haematology primarily increased Heinz Bodies and clinical chemistry. *Conclusion*: The data set for repeat dose toxicity for PAPP is sparse, but the 14 day studies with 14 day recovery period in rat and monkey, while not guideline studies, provide sufficient data for classification. **17 mg/kg bw/day** is considered to be a LOAEL in the monkey study based on the Heinz Body formation in associated with increased methaemoglobin. The haematology data suggest an effect of PAPP on erythropoiesis aside from oxidative damage and haemolysis. In both these studies, the study authors attribute the findings to pharmacological activity of the substance (in the context of use of the substances to prevent toxicity in humans this was seen as a beneficial effect). Since the methaemoglobin response may not be rapidly reversible, and there is known human genetic variability in susceptibility, this end point should be considered of toxicological significance, particularly because it occurred in association with Heinz Body formation in monkeys. In comparison to the table in the User Guide (ERMA 2008, p17-9) this value is an appropriate trigger for 6.9A (taking into account the 14 day exposure period).	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				Recommend that the classifications be changed to 6.1B, 6.9A (oral for single and repeat exposure).	
Water dispersible granule containing 500 g/kg azoxystrobin	HSR000616	6.1D, 6.4A , 9.1A	6.1D, 6.4A , **6.9B** 9.1A, **9.2C**	**Add 6.9B, 9.2C** **9.2C classification** Based on an EC50 value of 28.3 mg/kg dry soil, Azoxystrobin is classified as 9.2C. This substance has >25% azoxystrobin so should be classified as 9.2C. **6.9B classification** Azoxystrobin has also been classified as a 6.9B based on the following data: TYPE OF STUDY: 90-day subchronic toxicity study SPECIES: Dog STRAIN: Beagle NO. ANIMALS/SEX/GROUP: 4 males, 4 females TEST SUBSTANCE: Azoxystrobin DOSE LEVELS: 0, 10, 50, 250 mg/kg bw/day ROUTE: Oral GLP: No data TEST GUIDELINES: OECD 408 REMARK: 250 mg/kg bw/day: Increase in liquid stool, decrease in food consumption, increase in platelet count were observed no both males and females	No change to control codes. However, changes to labelling and safety data sheet information will be required.

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				50 mg/kg bw/day: Salivation, regurgitation and vomiting in males and suppression of body weight gain in females 10 mg/kg bw/day: No toxicological finding LOAEL: 50 mg/kg bw/day NOAEL: 10 mg/kgbw/day REFERENCE SOURCE: Review report for the active substance azoxystrobin Finalised in the Standing Committee on Plant Health at its meeting on 22.4.1998 in view of the inclusion of azoxystrobin in Annex I of Directive 91/414/EEC. [EC New Active substances Reviews] RELIABILITY (KLIMISCH SCORE): 2 This substance has >1% azoxystrobin therefore should be classified as 6.9B.	
				Recommend that the classifications 6.9B and 9.2C be added	
Benzene, C10-13-alkyl derivs. CAS: 67774-74-7	HSR003725	**6.8B**		**Remove 6.8B** The EU Risk Assessment report for C10-13-alkyl derivatives of benzene (CAS Number : 67774-74-7) states the following with regards to the reproductive and developmental toxicity of this substance: Reproductive toxicity: In the reproductive toxicity study groups of 30 rats/sex/group were given doses of 0, 5, 50 and 500 mg/kg/d. F0 animals received a 10-weeks premating treatment period and were then mated to produce a single litter; F1 animals were dosed for 11 weeks before mating to	**All controls will be removed** as this substance no longer triggers a HSNO classification. The substance is non-hazardous under HSNO and no longer requires an approval.

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				produce a single litter. At 500 mg/kg/d decreases in weight gains during premating and early lactation were found in F0 females and during premating and gestation, respectively for males and females in both generations. Decreases were also found in litter size, pup viability at birth, survival, through day 4 of postnatal life, and weights on days 14 and 21. At 50 mg/kg/d only a reduction in F1 of pup weight gain at day 7 was observed but this effect had returned to normal at day 14 and 21. This temporary reduction in pup weight only occurred in one generation, i.e. F1, and was thus not consistent across generations. Adult and weaned pups received a gross post-mortem examination. Histopathology studies were conducted on reproductive tissues, tissues with gross lesions, and the pituitary gland taken from each adult in the control and high dose groups. No adverse effects of treatment were evident from the gross post-mortem and histopathological evaluations. The significant findings only at 500 mg/kg/d (for F0 and F1 litters) and the nonconsistent effects of treatment at lower dose, show that the NOAEL for reproductive toxicity is 50 mg/kg/d for both parental and neonatal animals. Developmental toxicity: In this study groups of 24 mated females were given doses of 0, 125, 500 and 2000 mg/kg/day from day 6 to 15 of gestation. Dams were terminated at gestation day 20 and fetuses were examined for external soft tissues and skeletal defects. The only effect noted at 125 mg/kg/d was a slight decrease in maternal weight gain, which was not significant. The decreases in maternal weight gain were significant at 500 and 2000 mg/kg/d;	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				however, compensatory increases in weight gain occurred during the post-treatment period. Ossification variations and delayed ossification increased significantly at 2000 mg/kg/day (79.7% of fetuses with variations and delayed ossification and 57.3% in the control group) and were above control level at 500 mg/kg/d. There were no significant differences between control and treated groups in the number of fetuses with malformations. The substance should not be considered as a developmental toxicant since an increased incidence of ossification variations and delayed ossification only at dose levels causing maternal toxicity cannot be considered as specific effects on prenatal development. Comments and Recommendations: We concur with the conclusions of the EU assessment and note that effects on ossification only occurred at doses that induced significant decrease in maternal bodyweight gain. These effects are not considered to be specific reproductive or developmental toxicity but rather a nonspecific result of maternal toxicity. It is therefore proposed that the 6.8B classification is removed.	
Benzotriazole CAS: 95-14-7	HSR003532	**6.1B, 6.3A, 6.4A,** 9.1D	**6.1D**, 9.1D	**Remove 6.3A,6.4A** **Change 6.1B (inhalation) to 6.1D (inhalation, overall classification changed from 6.1B to 6.1D** **6.1 Acute Inhalation Classification:** New data: LC_{50} = 1910 mg/m^3/3 hours. Data quality was poor (Klimisch score 3) given that the MMAD and GSD of the inhaled aerosol was not measured. However, current data is also poor (second source i.e. Klimisch Score 4), so this is something of an improvement. No other publicly-	Controls to **remove** based on the removal of 6.3A and 6.4A, and the change from 6.1B to 6.1D AH1, PG2, T3, T6, TR1. **Remove variation code** 9 **Add** PS4

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				available data appears to be available.	
1H-Benzotriazole, >10 - 24% in a non hazardous diluent	HSR005624	6.1E, **6.4A**	6.1E	Therefore, using Haber's law to adjust to a 4 hour exposure: $LC_{50} = \frac{3}{4} x\, 1910 = 1432.5 mg/m^3/4\ hours$ 1 m^3 = 1000 L Therefore: $LC_{50} = \frac{1432.5}{1000} = 1.4325 mg/L/4 hours$ *Accordingly, the substance is classified as 6.1D (inhalation) but with low reliability regarding the classification* **6.1 Acute Dermal Classification:** Based upon poor quality data (Klimisch score 3 due to absence of a critical control group), the rabbit dermal LD_{50} > 2000 mg/kg BW. *Accordingly, given that the submitted data is impossible to interpret because of the lack of a control group, the current 6.1D (dermal) classification is retained, but with a low reliability regarding the classification.* **6.3 Skin Irritation Classification:** Based upon high quality data (OECD 404, Klimisch score 1) the substance is not a skin corrosive or irritant (erythema and oedema scores = 0). Accordingly the substance should not be classified for skin irritancy (high reliability).	Controls to **remove** based on removal of 6.4A P3

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				6.4 Eye Irritation Classification: *Based upon high quality data (OECD 405, Klimisch score 1) substance does not meet the criteria for 6.4 classification (high reliability).* Draize scores are tabulated and averaged below: Scores[a] observed after: 1 h / 24 h / 48 h / 72 h / 7 days cornea opacity: 1,1,1 / 1,1,1 / 1,0,1 / 0,0,0 / 0,0,0 iris: 1,1,0 / 1,0,0 / 1,0,0 / 0,0,0 / 0,0,0 conjunctivae redness: 1,1,1 / 1,1,2 / 2,1,2 / 1,0,1 / 0,0,0 chemosis: 2,2,3 / 1,2,1 / 1,0,0 / 0,0,0 / 0,0,0 discharge: 2,2,2 / 2,2,0 / 1,0,0 / 0,0,0 / 0,0,0 [a] Figures are irritation scores per animal. Grades for scoring range from 0-2 for iris, 0-3 for conjunctival redness and from 0-4 for corneal opacity and conjunctival chemosis and discharge. $MeanCornealOpacity = \frac{1+1+1+1+1}{9} = 0.56$ $MeanIris = \frac{1+1}{9} = 0.22$ $MeanRedness = \frac{1+1+2+2+1+2+1+1}{9} = 1.22$ $MeanChemosis = \frac{1+2+1+1}{9} = 0.44$	
Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water CAS: 7778-54-3	HSR006978	See justification for details	See justification for details	Reference: UN Recommendations on the Transport of Dangerous Goods- Model Regulations 16th Revised Edition There are currently 4 substances that have HSNO approval with CAS 7778-54-3	Controls for this substance will be the same as the current approval for HSR001317. http://www.epa.govt.nz/s

<table>
<tr><th>Substances affected (Name and CAS #)</th><th>Approval Number</th><th>Current classification</th><th>New classification</th><th>Justification for Change</th><th>Effect on controls</th></tr>
<tr><td>Hypochlorous acid, calcium salt (dry), > 39% available chlorine
CAS: 7778-54-3</td><td>HSR001317</td><td>See justification for details</td><td>See justification for details</td><td rowspan="3">
<table>
<tr><th></th><th>CAS number</th><th>Substance name</th><th>Approval number</th></tr>
<tr><td>A</td><td>7778-54-3</td><td>Calcium hypochlorite, hydrated, with not less than 5.5% but not more than 16% water</td><td>HSR006978</td></tr>
<tr><td>B</td><td>7778-54-3</td><td>Hypochlorous acid, calcium salt (dry), > 39% available chlorine</td><td>HSR001317</td></tr>
<tr><td>C</td><td>7778-54-3</td><td>Hypochlorous acid, calcium salt (dry), > 39% available chlorine, >26% in a non hazardous diluent</td><td>HSR007373</td></tr>
<tr><td>D</td><td>7778-54-3</td><td>Hypochlorous acid, calcium salt (dry), 10 - 39% available chlorine</td><td>HSR001452</td></tr>
</table>

Current HSNO classifications
A. HSR006978: 5.1.1B , 6.1D 8.1A , 8.2C , 8.3A , 9.1A, 9.2A , 9.3C
B. HSR006978: 5.1.1B , 6.1D 8.1A , 8.2C , 8.3A , 9.1A, 9.2A , 9.3C
C. HSR001317: 5.1.1B , 6.1D 8.1A , 8.2B , 8.3A , 9.1A, 9.2A , 9.3C
D. HSR007373: 5.1.1B , 6.1D, 8.1A , 8.2B , 8.3A , 9.1A, 9.2A , 9.3C
E. HSR001452: 5.1.1C , 6.1D, 8.1A , 8.2C , 8.3A , 9.1A, 9.2A , 9.3C
Rev 15 of the UN Recommendations on the Transport of Dangerous Goods- Model Regulations has 5 entries for calcium hypochlorite
<table>
<tr><th></th><th>Name and description</th><th>Class</th><th>UN Number</th></tr>
<tr><td>1</td><td>CALCIUM HYPOCHLORITE, DRY</td><td>5.1</td><td>1748</td></tr>
</table>
</td><td rowspan="3">earch-databases/Pages/controls-details.aspx?SubstanceID=1767&AppID=3279</td></tr>
<tr><td>Hypochlorous acid, calcium salt (dry), > 39% available chlorine, >26% in a non hazardous diluents
CAS: 7778-54-3</td><td>HSR007373</td><td>See justification for details</td><td>See justification for details</td></tr>
<tr><td>Hypochlorous acid, calcium salt (dry), 10 - 39% available chlorine
CAS: 7778-54-3</td><td>HSR001452</td><td>See justification for details</td><td>See justification for details</td></tr>
</table>

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls

2	CALCIUM HYPOCHLORITE, HYDRATED with not less than 5.5% but not more than 16% water	5.1	2880
3	CALCIUM HYPOCHLORITE,HYDRATED MIXTURE with not less than 5.5% but not more than 16% water	5.1	2880
4	CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)	5.1	1748
5	CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39% available chlorine	5.1	2208

Rev 16 of the UN Recommendations on the Transport of Dangerous Goods- Model Regulations added another 4 entries and has 9 entries for calcium hypochlorite. The addition of the extra 4 entries introduced a new sub risk of corrosive.

	Name and description	Class	UN Number
1	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE	5.1 PG II	1748

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change				Effect on controls
					MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)			
				2	CALCIUM HYPOCHLORITE, DRY or CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 39% available chlorine (8.8% available oxygen)	5.1 PG III	1748	
				3	CALCIUM HYPOCHLORITE MIXTURE, DRY with more than 10% but not more than 39% available chlorine	5.1 PGIII	2208	
				4	CALCIUM HYPOCHLORITE, HYDRATED with not less than 5.5% but not more than 16% water or CALCIUM HYPOCHLORITE,HYDRATED MIXTURE with not less than 5.5% but not more than 16% water	5.1 PG II	2880	
				5	CALCIUM HYPOCHLORITE, HYDRATED with not less than 5.5% but not more than 16% water or CALCIUM HYPOCHLORITE,HYDRATED MIXTURE with not less than 5.5% but not more than 16% water	5.1 PG III	2880	
				6	CALCIUM HYPOCHLORITE, DRY, CORROSIVE with more than 39% available	5.1 SUBSID	3485	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change				Effect on controls
					chlorine (8.8% available oxygen) or CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 39% available chlorine (8.8% available oxygen)	ARY RISK 8 PGII		
				7	CALCIUM HYPOCHLORITE MIXTURE, DRY, CORROSIVE with more than 10% but not more than 39% available chlorine	5.1 SUBSIDARY RISK 8 PGIII	3486	
				8	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE with not less than 5.5% but not more than 16% water or CALCIUM HYPOCHLORITE,HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1 SUBSIDARY RISK 8 PGII	3487	
				9	CALCIUM HYPOCHLORITE, HYDRATED, CORROSIVE with not less than 5.5% but not more than 16% water or CALCIUM HYPOCHLORITE,HYDRATED MIXTURE, CORROSIVE with not less than 5.5% but not more than 16% water	5.1 SUBSIDARY RISK 8 PGIII	3487	
				The 4 HSNO approvals do not currently match up to the UN classifications. All the HSNO approvals have corrosive classifications but the names do not reflect this. The dilution approval HSR007373 is obsolete as this is covered by the “mixture” from the UNRTDG description.				

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				It is recommended to removal al the current approvals for calcium hypochlorite and replace the approvals with one approval for the chemical calcium hypochlorite with the following classifications: 5.1.1B, 6.1D, 8.1A, 8.2B, 8.3A, 9.1A, 9.2A, 9.3C. This would be consistent with the classification given under the EU Classification, Labeling, Packaging (CLP) Regulation which is based on the UN GHS classification system. It would also be consistent with the classification given under Australian workplace chemicals regulation. Mixture rules from HSNO guidance material or the UN GHS can be used to determine the classification of the various dilutions and forms. These dilutions can be approved under appropriate group standards.	
6-Nonenamide, N-[(4-hydroxy-3-methoxyphenyl)methyl]-8-methyl-, (6E)- **(synonym Capsaicin)** CAS: CAS: 404-86-4	HSR007288	6.3A, 6.4A	**6.1C(oral),** 6.3A, 6.4A, **9.3B**	**Add 6.1C, 9.3B** Capsaicin is currently approved with 6.3A (skin irritant) and 6.4A (eye irritant) classifications. The substance was approved as part of the single component project. Therefore, data was not rigorously sought. The mice LD50 value of 47.2 mg/kg from the Hazardous Substances Data Bank indicates that the substance must be classified as 6.1B. Additional LD50 values from other material safety data sheets for male mice were 60 – 75 and 122 - 294 mg/kg depending on the carrier solution. This will classify the substance as 6.1C. For rats, the LD50 values were determined to be 148.1 mg/kg and 162.1 mg/kg for female and male rats, respectively. These values were used in the Opinion of the EU Scientific Committee on Food on Capsaicin (2002) document. There is no corresponding primary information for all the LD50 values.	Controls to **add** based on addition of 6.1C and 9.3B D5, E1*, E2, E4, E6, EM11, EM12, EM13, EM7, I11, I17, I18, I20, I29, I30, I8, PG3, T3, T8 Note the default controls AH1 and TR1 have not been assigned in line with variations applied in the Hazardous substances (Chemicals) Transfer Notice 2006 (GN72) *add variation code 11

<table>
<tr><th>Substances affected (Name and CAS #)</th><th>Approval Number</th><th>Current classification</th><th>New classification</th><th>Justification for Change</th><th>Effect on controls</th></tr>
<tr><td></td><td></td><td></td><td></td><td>However, it is noted that the majority of the LD50 values for rats and mice were within 60 – 294 mg/kg. Based on the weight of evidence, it is proposed that capsaicin is classified as 6.1C (oral) using the LD50 of 60 mg/kg for mice as the key data. If the substance is classified as 6.1C, then it will also be classified as 9.3B.

References: Apropriate data listed under Animal Toxicity Studies:

http://toxnet.nlm.nih.gov/cgi-bin/sis/search/r?dbs+hsdb:@term+@rn+@rel+404-86-4
NPIC Capsaicin Technical Fact Sheet

EU Opinion of the Scientific Committee on Food on Capsaicin, 2002</td><td>from the Hazardous substances (Chemicals) Transfer Notice 2006 (GN72)</td></tr>
<tr><td>Chloropicrin

CAS: 76-06-2</td><td>HSR002939</td><td>6.1A(inhalation), 6.1C(oral), 6.3A, 6.5A, 6.9A, 8.3A, 9.1A, 9.2A, 9.3B</td><td>6.1A(inhalation), 6.1B(oral, dermal), 8.2C, 6.5B, 6.5A, 6.9A, 8.3A, 9.1A, 9.1A(algae), 9.2B, 9.3A</td><td rowspan="2">Add 6.5B
Change 6.3A to 8.2C, 9.2A to 9.2B, 9.3B to 9.3A
<table><tr><th>Current data and current classification</th><th>New data to support a different classification</th><th>Decision</th></tr><tr><td colspan="3">6.1 Acute toxicity</td></tr><tr><td>SPECIES: Rat

ROUTE: Oral

ENDPOINT: LD50

VALUE: 250 mg/kg

REFERENCE SOURCE: [NTP]

Current Classification:</td><td>SPECIES: Rat

ROUTE: Oral

ENDPOINT: LD_{50}

VALUE: 37.5 mg/kg bw.*

REFERENCE SOURCE: US EPA Human</td><td>Change classification from 6.1C to 6.1B (oral)</td></tr></table></td><td>No change to control codes. However, changes to labelling and safety data sheet information will be required.</td></tr>
<tr><td>Liquid containing 615 g/kg 1,3-dichloropropene and 345 g/kg chloropicrin</td><td>HSR001640</td><td>3.1B, 6.1A (inhalation), 6.3A, 6.4A, 6.5A, 6.5B, 6.6B, 6.7B, 6.9A, 9.1A, 9.2A, 9.3B</td><td>3.1B, 6.1A (inhalation), 6.1B (oral), 6.1C (dermal), 8.2C, 6.5A , 6.5B, 6.6B, 6.7B, 6.9A, 8.3A, 9.1A, 9.1A (algae), 9.2B, 9.3A</td><td>No change to control codes. However, changes to labelling and safety data sheet information will be required.</td></tr>
</table>

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change			Effect on controls
Liquid containing 990 g/kg chloropicrin	HSR001641	6.1A (inhalation), **6.3A**, 6.5A, 6.9A, 8.3A , 9.1A, **9.2A, 9.3B**	6.1A (inhalation), **6.1B oral, dermal)**, **8.2C**, 6.5A, **6.5B**, 6.9A, 8.3A , 9.1A, **9.1A (algae)**, **9.2B, 9.3A**	6.1C (oral)	Health Risk Assessment Chloropicrin, Office of Pesticide Programs, Health Effects Division, 18 June 2008 (MRID 05014376 (1976)) RELIABILITY (KLIMISCH SCORE): 2		No change to control codes. However, changes to labelling and safety data sheet information will be required.
Pic Plus Fumigant	HSR100063	6.1A (inhalation), **6.1C (oral), 6.3A** , 6.5A , 6.9A, 8.3A , 9.1A, **9.2A , 9.3B**	6.1A (inhalation), **6.1B (oral, dermal), 8.2C**, 6.5A, **6.5B**, 6.9A, 8.3A, 9.1A, **9.2B, 9.3A**	**6.3/8.2 Skin irritation corrosion**			No change to control codes. However, changes to labelling and safety data sheet information will be required.
				REMARK: May result in severe skin irritation, difficulty breathing, headache, and cyanosis. REFERENCE SOURCE: [Rumack BH: POISINDEX(R) Information System. Micromedex, Inc.,	US EPA assigned chloropicrin to Toxicity Category 1. Corrosive. TEST GUIDELINE: 879.2500 REFERENCE: US EPA Human Health Risk	**Change classification from 6.3A to 8.2C.**	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change			Effect on controls
				Englewood, CO, 2001; CCIS Volume 110, edition exp November, 2001. Hall AH & Rumack BH (Eds):TOMES(R) Information System. Micromedex, Inc., Englewood, CO, 2001; CCIS Volume 110, edition exp November, 2001.] **PEER REVIEWED** [HSDB] Current classification 6.3A.	Assessment Chloropicrin, Office of Pesticide Programs, Health Effects Division, 18 June 2008 (MRID 05014376 (1976))		
				Contact sensitizer			
				Chemical safety data sheet published by the Consejo Interamericano de Seguridad, 33 Park Place,	Chloropicrin is classified 6.5A based on human data: SPECIES: Human	**Change classification from ND to 6.5B**	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change			Effect on controls
				Englewood, NJ 07631, USA. Health hazards: delayed effects; sensitisation; severe irritation of the eyes, skin and respiratory tract; respiratory diseases (pulmonary oedema). (Noticias de Seguridad Mar. 1993, Vol.55, No.3. 4p. Insert.) [TOXLINE] Currently no 6.5B classification.	RESULT: Inhalation may also product anaemia, weak and irregular heart and recurrent asthma attacks. REFERENCE SOURCE: International Labour Office. Encyclopedia of Occupational Health and Safety. Volumes I and II. New York: McGraw-Hill Book Co., 1971. 294[HSDB] RELIABILITY (KLIMISCH SCORE): 2 SPECIES: Human RESULT: Health hazards: delayed effects;		

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change			Effect on controls
					sensitisation; severe irritation of the eyes, skin and respiratory tract; respiratory diseases (pulmonary oedema). REFERENCE SOURCE: Noticias de Seguridad Mar. 1993, Vol.55, No.3. 4p. Chemical safety data sheet published by the Consejo Interamericano de Seguridad, 33 Park Place, Englewood, NJ 07631, USA. [TOXLINE] RELIABILITY (KLIMISCH SCORE): 2 Despite the lack of data on		

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change			Effect on controls
					contact sensitization a substance which triggers 6.5A, must also be a contact sensitizer, so the 6.5B classification is added.		

Ecotoxicity

Current classification	New data to support a different classification	Decision
Aquatic ecotoxicity		
No data	SPECIES:selenastrum capricornutum TYPE OF EXPOSURE: DURATION: 72 hr ENDPOINT: ErC50 VALUE: 0.00016 mg/L REFERENCE	**Change classification from ND to 9.1A (algal)**

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change			Effect on controls
					SOURCE:EFS EU DAR chloropicrin 2006		
				Soil ecotoxicity			
				REMARK: Chloropicrin kills earthworms. REFERENCE SOURCE: [EDWARD CA; NATURE (LONDON) 281 (5730): 339 (1979)]**PEER REVIEWED** [HSDB]	species: earthworm duration exposure 14 d endpoint LC50 = 75.5 mg/kg (EC50= 7.55 mg/kg, UG conversion factor 10) source: EFSA EU DAR chloropicrin 2006	**Change classification from 9.2A to 9.2B**	
				Terrestrial vertebrates			
				SPECIES: Rat	SPECIES: Rat	**Change classification from 9.3B to 9.3A**	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change			Effect on controls
				ENDPOINT: LD50 VALUE: 250 mg/kg REFERENCE SOURCE: [NTP]	ENDPOINT: LD_{50} VALUE: **37.5 mg/kg bw.*** REFERENCE SOURCE: US EPA Human Health Risk Assessment Chloropicrin, Office of Pesticide Programs, Health Effects Division, 18 June 2008 (MRID 05014376 (1976)) RELIABILITY (KLIMISCH SCORE): 2		
Cyclohexyldimethylamine CAS: 98-94-2	HSR003584	6.1D	**3.1C,** .6.1D, **8.2B, 8.3A**	**Add 3.1C, 8.2B and 8.3A** N,N-Dimethyl-cyclohexylamine has a specific UN number 2264 Class 8 Sub risk 3 packing group II, with risk phrases R10,R20/21/22,R34. Class 8 packing group II is equivalent to an HSNO 8.2B classification. SDS provided assign a flashpoint of 41^{o}C to this substance, this is equivalent to a 3.1C classification. The UN number sub risk 3 also supports the assignment of a 3.1C classification. In the “Precedence of Hazards” table, a class 3 takes			Controls to **add** based on the addition of 3.1C, 8.2B and 8.3A D2, EM10, EM2, EM9, F1, F11, F12, F14, F16, F2, F3, F5, F6, GN35A, I10, I13, I2, I25, I22, I5, P14, P5, PG2, T3.

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				precedence over a class 8 if they are both the same packing group. Because 3 is the sub risk for this UN number it must be of a lower packing group therefore is a PG III for flammability.	Schedule 9 Hazardous Substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice (GN35)
Ethanol, 2-butoxy- CAS: 111-76-2	HSR001154	3.1D, **6.1C**(dermal), **6.1D**(inhalation), 6.1D(oral), 6.3B, 6.4A, **9.3B**	3.1D, **6.1E**(dermal), 6.1D(inhalation), 6.1D(oral), 6.3B, 6.4A, **9.3C**	**6.1C (dermal) changed to 6.1E and Change 9.3B to 9.3C.** 2-butoxyethanol or ethanol, 2-butoxy-is approved under HSNO with the following acute toxicity and terrestrial vertebrate ecotoxicity classification: • 6.1D (oral) rabbit LD_{50} of 300 mg/kg bw. • 6.1C (dermal) guinea pig LD_{50} of 210 mg/kg bw • 6.1D (Inhalation) rat LC_{50} of 2.21 mg/L. • 9.3B Studies have shown that intravascular hemolysis (the breakdown of red blood cells and the release of hemoglobin) is the major effect of EGBE in rats, mice and rabbits. This is mediated by its major	Controls to **remove** based on the change from 9.3B to 9.3C I3, I23.

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
Ethylene glycol monobutyl ether, **>25% in a non hazardous diluents** CAS: 111-76-2	HSR006399	3.1D, **6.1C**(dermal), **6.1D**(inhalation), 6.1D(oral), 6.3B, 6.4A, **9.3B**	3.1D, 6.1E(dermal), 6.1D(inhalation), 6.1D(oral), 6.3B, 6.4A, 9.3C	metabolite; 2-butoxyacetic acid. Also it was noted that humans and guinea pigs are less sensitive to the hemolytic effects of EGBE than are typical laboratory species such as mice, rats or rabbits. This has been demonstrated in several laboratory studies and through the use of in vitro studies using either whole blood or washed erythrocytes. These studies have been used in the assessment of 2-butoxyethanol for other regulators like NICNAS and US EPA. Based on the above findings, it is considered prudent that the guinea pig acute toxicity data will be more representative of the expected human response than any other laboratory species. Therefore, guinea pig acute toxicity data on the three routes of exposure (if available) must be used for the acute toxicity classification of 2-butoxyethanol. • 6.1 (oral) and 9.3 (terrestrial vertebrate ecotoxicity): LD_{50} (guinea pig) = 1414 mg/kg (Shepard 1994 (a)). Other guinea pig LD_{50} values have been cited in the open literature ranging from 950 - 1400 mg/kg but the LD_{50} of 1414 mg/kg is considered appropriate as it is the most recent data. • 6.1 (dermal): There is a wide variability in the dermal LD_{50} values for guinea pigs ranging from 210 – 2000 mg/kg. According to open literature, these are old studies using non-standard methods. Also most of the LD50 values were closer to the estimated value of 2000 mg/kg rather than the 210 mg/kg. This is consistent with a recent acute dermal toxicity study (Shepard 1994 (b)) which showed no deaths in guinea pig at the single limit dose of 2000 mg/kg. Based on the weight of evidence, the LD_{50} of > 2000 mg/kg is considered appropriate to be used in the classification of 2-butoxyethanol for acute dermal toxicity. • 6.1 (inhalation): 4 hour nose only LC_{50} in Fischer 344 rats is 450	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				ppm = 2.174 mg/L - thus 6.1D inhalation . Since the vapour pressure of the substance is 100 Pa, approximately a tenth of that of water, it is more appropriate to classify the substance as a mist, which would give 6.1D. From these LD50, LC50 values and physical properties of 2-butoxyethanol, it will be classified as • 6.1D (oral); • 6.1E (dermal); and • 6.1D (inhalation)$_{mist}$ • 9.3C http://www.nicnas.gov.au/publications/car/pec/pec6/pec_6_full_report_pdf.pdf http://ec.europa.eu/health/ph_risk/committees/04_scher/docs/scher_o_087.pdf http://ecb.jrc.ec.europa.eu/DOCUMENTS/Existing-Chemicals/RISK_ASSESSMENT/REPORT/egbereport408.pdf	
Lidocaine CAS: 137-58-6	HSR003762	6.1C, 6.3A, 6.4A, 6.6B, 6.7B, 6.9B, 9.3B	6.1C, 6.3A, 6.4A, **6.5B**, 6.6B, 6.7B, 6.9B, 9.3B	**Add 6.5B.** Based on the following references, lidocaine should be classified as a contact sensitizer in humans. 1: Yuen WY, Schuttelaar ML, Barkema LW, Coenraads PJ. Bullous allergic contact dermatitis to lidocaine. Contact Dermatitis. 2009 Nov;61(5):300-1. PubMed PMID: 19878248. 2: Thyssen JP, Engkilde K, Menné T, Johansen JD. Prevalence of	No change to control codes. However, changes to labelling and safety data sheet information will be required.

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				benzocaine and lidocaine patch test sensitivity in Denmark: temporal trends and relevance. Contact Dermatitis. 2011 Jan 13. doi: 10.1111/j.1600-0536.2010.01858.x. [Epub ahead of print] PubMed PMID: 21226720. 3: Jussi L, Lammintausta K. Sources of sensitization, cross-reactions, and occupational sensitization to topical anaesthetics among general dermatology patients. Contact Dermatitis. 2009 Mar;60(3):150-4. PubMed PMID: 19260912. 4: Timmermans MW, Bruynzeel DP, Rustemeyer T. Allergic contact dermatitis from EMLA cream: concomitant sensitization to both local anesthetics lidocaine and prilocaine. J Dtsch Dermatol Ges. 2009 Mar;7(3):237-8. Epub 2008 Nov 26. English, German. PubMed PMID: 19054423. 5: Gunson TH, Greig DE. Allergic contact dermatitis to all three classes of local anaesthetic. Contact Dermatitis. 2008 Aug;59(2):126-7. PubMed PMID: 18759887. 6: Gómez-de la Fuente E, Rosado A, Alvarez JG, Vicente FJ. [Allergic contact dermatitis from lidocaine in ear drops]. Actas Dermosifiliogr. 2008 Jun;99(5):407-10. Spanish. PubMed PMID: 18501174. 7: Warshaw EM, Schram SE, Belsito DV, DeLeo VA, Fowler JF Jr, Maibach HI, MarksJG Jr, Mathias CG, Pratt MD, Rietschel RL, Sasseville D, Storrs FJ, Taylor JS, Zug KA. Patch-test reactions to topical anesthetics: retrospective analysis of cross-sectional data, 2001 to 2004. Dermatitis. 2008 Mar-Apr;19(2):81-5. PubMed PMID: 18413108. 8: Amado A, Sood A, Taylor JS. Contact allergy to lidocaine: a report of sixteen cases. Dermatitis. 2007 Dec;18(4):215-20. PubMed PMID: 18021602.	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				9: Hall V, Cheng J, Klemawesch P, Guarderas J. Lidocaine sensitivity in a patient with multiple skin cancers. Dermatitis. 2006 Jun;17(2):91-2. PubMed PMID: 16956460. 10: Jovanović M, Karadaglić D, Brkić S. Contact urticaria and allergic contact dermatitis to lidocaine in a patient sensitive to benzocaine and propolis. Contact Dermatitis. 2006 Feb;54(2):124-6. PubMed PMID: 16487290. 11: Sanchez-Morillas L, Martinez JJ, Martos MR, Gomez-Tembleque P, Andres ER. Delayed-type hypersensitivity to mepivacaine with cross-reaction to lidocaine. Contact Dermatitis. 2005 Dec;53(6):352-3. PubMed PMID: 16364127. 12: Kaufmann JM, Hale EK, Ashinoff RA, Cohen DE. Cutaneous lidocaine allergy confirmed by patch testing. J Drugs Dermatol. 2002 Sep;1(2):192-4. PubMed PMID: 12847744. 13: Mackley CL, Marks JG Jr, Anderson BE. Delayed-type hypersensitivity to lidocaine. Arch Dermatol. 2003 Mar;139(3):343-6. PubMed PMID: 12622627. 14: Redfern DC. Contact sensitivity to multiple local anesthetics. J Allergy Clin Immunol. 1999 Oct;104(4 Pt 1):890-1. PubMed PMID: 10518839. 15: Bircher AJ, Surber C. Allergic contact dermatitis from acylamide local anesthetics. Contact Dermatitis. 1999 May;40(5):292-3. PubMed PMID: 10344496. 16: Weightman W, Turner T. Allergic contact dermatitis from lignocaine: report of 29 cases and review of the literature. Contact Dermatitis. 1998 Nov;39(5):265-6. Review. PubMed PMID: 9840272. 17: Downs AM, Lear JT, Wallington TB, Sansom JE. Contact sensitivity and systemic reaction to pseudoephedrine and lignocaine.	

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				Contact Dermatitis. 1998 Jul;39(1):33. PubMed PMID: 9686978. 18: Kawada A, Hiruma M, Fujioka A, Tajima S, Akiyama M, Ishibashi A. Simultaneous contact sensitivity due to lidocaine and crotamiton. Contact Dermatitis. 1997 Jul;37(1):45. PubMed PMID: 9255495. 19: Bircher AJ, Messmer SL, Surber C, Rufli T. Delayed-type hypersensitivity to subcutaneous lidocaine with tolerance to articaine: confirmation by in vivo and in vitro tests. Contact Dermatitis. 1996 Jun;34(6):387-9. PubMed PMID: 8879922. 20: Chandler MJ, Grammer LC, Patterson R. Provocative challenge with local anesthetics in patients with a prior history of reaction. J Allergy Clin Immunol.1987 Jun;79(6):883-6. PubMed PMID: 3584743.	
Magnesium chloride CAS: 7786-30-3	HSR002764	6.1E, **6.3A**, 6.4A	6.1E, 6.4A	**Remove 6.3A classification** SPECIES:Not known RESULT: The substance irritates the eyes and the respiratory tract. REFERENCE SOURCE: ICSC IPCS [INCHEM] Clearly this does not justify a 6.3A classification Recommendation: That the 6.3A classification is removed.	Control to **delete** based on the removal of 6.3A T5.
Malachite green CAS: 569-64-2	HSR003692	6.1C, 6.3A, 8.3A, 9.1A, 9.3B	6.1C, 6.3A, 8.3A, **6.8B**, 9.1A, 9.3B	**Add 6.8B** There is some limited evidence that Malachite Green has the ability to cause developmental effects without maternal toxicity and is classed as such by other major worldwide regulators (EU and US EPA). This was based on a single rabbit study which showed effects whereas a rat study showed no developmental effects. In addition the validity of the rabbit study was questioned and considered at best equivocal. US EPA website indicates that Malachite green is being regulated by some Federal agency as causing adverse reproductive effects.	No change to control codes. However, changes to labelling and safety data sheet information will be required.
Liquid containing 0.015 - 0.07% acriflavine, 0.05 - 0.25% malachite green and	HSR002410	9.1C	**6.8B,** 9.1C		Controls to **add** based on the addition of 6.8B D4, I16, I17, I18, I28, T1,

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
0.01 - 0.05% quinine sulphate				HSNO criteria for 6.8B classification; data from animal studies which indicate evidence of an adverse effect as a result of exposure to the substance which are not secondary to non-specific consequences and there is not sufficient evidence to give a 6.8A classification. Summary data available via the EU ECB meeting minutes are lacking detail, however considering the support for developmental classification in the EU, the weight of evidence is such that 6.8B classification should be applied The European Commission, Toxicology and Chemical Substances unit agreed to classify malachite green as R63. http://ecb.jrc.ec.europa.eu/documents/Classification-Labelling/ADOPTED_SUMMARY_RECORDS/3003r3_sr_CMR0103.pdf (see pages 27 and 28)	T2, T4, T5
Malachite green, >33% in a non hazardous diluent	HSR006531	6.1C, 6.3A , 8.3A , 9.1A, 9.3B	6.1C, 6.3A , 8.3A , **6.8B**, 9.1A, 9.3B		No change to control codes. However, changes to labelling and safety data sheet information will be required.
Metalaxyl CAS: 57837-19-1	HSR002862	6.1D, 6.4A, 6.5B, **6.9B** (oral), 9.1C, 9.3C	6.1D, 6.4A, 6.5B, **6.9A** (oral), 9.1C, 9.3C	**6.9B change to 6.9A** Currently the classification information states that the key target organ is cardiovascular toxicity. This is based upon the 1982 JMPR assessment which, in turn, derived this conclusion based upon the effect of metalaxyl on cardiac activity in male rats given an intraperitoneal injection of 200, 250 or 300 mg/kg bw. Metalaxyl decreased the heart rate at or near lethal doses. These findings have not been repeated in any of the oral exposure studies which are of greater relevance in the context of human exposure and the HSNO Act.	Controls to **add** based on the addition of 6.9A T3 Note: PG3 has been removed as a default control applying to the 6.9A. The 6.9A classification is not equivalent to a dangerous good therefore the PG3 is removed to be inline with the UNRTDG.
Emulsifiable concentrate containing 250 g/litre metalaxyl	HSR000663	6.1E , 6.3B , 6.4A , 6.5B , **6.9B**, 9.1C,	6.1E , 6.3B , 6.4A , 6.5B , **6.9A**, 9.1C,		
Emulsifiable concentrate containing 250 g/litre metalaxyl. Also contains methyl pyrrolidone	HSR000664	6.1E, 6.3A , 6.4A , 6.5B , 6.8A , **6.9B**, 9.1C	6.1E, 6.3A , 6.4A , 6.5B , 6.8A , **6.9A**, 9.1C		

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
Helios	HSR100206	3.1C , 6.1D, 6.3A , 6.4A , 6.5B , 6.8B , **6.9B**, 9.1C, 9.3C	3.1C , 6.1D, 6.3A , 6.4A , 6.5B , 6.8B , **6.9A**, 9.1C, 9.3C	**Short term toxicity** Target / critical effect: ↗ liver weight with centrilobular hepatocelular hypertrophy (rat) and ↗ plasma AP and ALT (dog) Lowest relevant oral NOAEL / NOEL: 0.66 mg/kg bw/day (10 ppm), -90-day rat); 7.25mg/kg bw and 8mg/kg bw in 6 months and 2 year in dog respectively Lowest relevant dermal NOAEL / NOEL: > 1000 mg/kg bw/day; 21-day, rabbit study The key effects are on the liver**:** **Long term toxicity and carcinogenicity** Target / critical effect: Liver (increased liver weight and ALT in female rats) Lowest relevant NOAEL: 9.43 mg/kg bw/day (250 ppm, 2-year rat study) Carcinogenicity: Not carcinogenic Accordingly, metalaxyl should be classified as 6.9A oral repeat exposure with the key target organ being the liver. The 6.9A classification is justifiable given that all the repeat-dose oral exposure NOAEL is < 10 mg/kg bw/day. This conclusion concurs with the most recent regulatory assessment on this active (EFSA March 2010). EUROPEAN COMMISSION HEALTH & CONSUMERS DIRECTORATE-GENERAL Directorate E – Safety of the food chain Unit E.3 - Chemicals, contaminants and pesticides Metalaxyl SANCO/10476/2010 – rev.1 12 March 2010 FINAL Review report for the active substance metalaxyl Finalised in the Standing Committee on the Food Chain and Animal Health at its meeting on 12 March 2010 in view of the inclusion of metalaxyl in Annex I of Directive 91/414/EEC	Controls to **add** based on the addition of 6.9A T3
Picasa 350DS	HSR100459	6.1D, 6.3B , 6.4A , 6.5B , **6.9B,** 9.1C , 9.3C	6.1D, 6.3B , 6.4A , 6.5B , **6.9A,** 9.1C , 9.3C		Controls to **add** based on the addition of 6.9A T3
Methanol CAS: 67-56-1	HSR001186	3.1B, **6.1D (oral)**, 6.4A, 6.8B, 6.9A, 9.3C	3.1B, 6.**1C** (oral, inhalation, dermal), 6.4A, 6.8B, 6.9A, 9.3C	**Change 6.1D to 6.1C** **Classification: 6.1C (oral), 6.1 C (inhalation), 6.1C (dermal).** **Basis for the Decision:** *Oral acute toxicity:* Classification is based upon the clinically-derived estimate of the average oral lethal dose in humans (0.3 to 1 g/kg bw).	No change to control codes. However, changes to labelling and safety data sheet information will be
Fuel, >60% methanol, <25%	HSR007623	3.1B, **6.1D**,	3.1B, **6.1C**,		

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
nitromethane		6.4A, 6.7B, 6.8B, 6.9A, 9.3C	6.4A, 6.7B, 6.8B, 6.9A, 9.3C	[1-4] This dose is considered reliable given that the toxicokinetics of methanol in humans is well-understood and the data are the result of the analysis of several hundred well-documented human cases. The average oral lethal dose in humans of 300 mg/kg bw meets the requirements of a conservative HSNO classification of 6.1C (upper cut off is ≤ 300 mg/kg bw). This classification is consistent with the classification of methanol under EU CLP (REGULATION (EC) No 1272/2008, Table 3.1, Annex VI). *Inhalation acute toxicity:* The available primate data that indicates that death will occur in monkeys at around 52 mg/L for a 4 hour exposure (study 218, IUCLID 4 Methanol, 2005). Humans are around 6-10 times more susceptible to acute methanol toxicity than primates.[5] Human deaths might be expected with 4 hour exposures of ≤ 10 mg/L (classifiable as 6.1C). This classification is consistent with the classification of methanol under EU CLP (REGULATION (EC) No 1272/2008, Table 3.1, Annex VI). *Dermal acute toxicity:* In primates, the acute dermal lethal dose is 393 mg/kg bw (studies 181 and 226, IUCLID 4 Methanol, 2005). Given that humans are at least 6-10 times more susceptible to acute methanol toxicity than primates, human fatalities could be expected at 24 hour semi-occlusive dermal exposures of ≤ 1000 mg/kg bw (classifiable as 6.1C).[5] This classification is consistent with the classification of methanol under EU CLP (REGULATION (EC) No 1272/2008, Table 3.1, Annex VI). 1. Bennett IL, Jr., Cary FH, Mitchell GL, Jr., et al. Acute methyl alcohol poisoning: a review based on experiences in an outbreak of 323 cases. *Medicine (Baltimore)* 1953;32:431-463. 2. Roe O. Species differences in methanol poisoning. *Crit Rev Toxicol*	required.
Methanol, >50% in a non hazardous diluent	HSR006429	3.1B, **6.1D**, 6.4A, 6.8B, 6.9A, 9.3C	3.1B, **6.1C**, 6.4A, 6.8B, 6.9A, 9.3C		Note the default controls T6 and TR1 have not been assigned in line with variations applied in the Hazardous substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2006 (GN35) and the Hazardous Substances (Chemicals) Transfer Notice 2006 (GN72) This means that AH1 is not required for the 6.1C classification only the 3.1B where appropriate.
Methanol, >44 - 50% in a non hazardous diluent	HSR006709	3.1C, **6.1D**, 6.4A, 6.8B, 6.9A, 9.3C	3.1C, **6.1C**, 6.4A, 6.8B, 6.9A, 9.3C		
Methanol, >25 - 44% in a non hazardous diluent Combine this substance with Methanol, >44 - 50% in a non hazardous diluent as they now have the same	HSR006428	3.1C, **6.1E**, 6.4A, 6.8B, 6.9A, 9.3C	3.1C, **6.1C**, 6.4A, 6.8B, 6.9A, 9.3C		Controls to **add** based on change from 6.1E to 6.1C: I20 Note the default controls

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
classification New substance name: Methanol, >25 - 50% in a non hazardous diluent				1982;10:275-286. 3. Girault C, Tamion F, Moritz F, et al. Fomepizole (4-methylpyrazole) in fatal methanol poisoning with early CT scan cerebral lesions. *J Toxicol Clin Toxicol* 1999;37:777- 780. 4. Kavet R, Nauss KM. The toxicity of inhaled methanol vapors. *Crit Rev Toxicol* 1990;21:21-50. 5. Fishbein L. Methanol. *Environmental Health Criteria*: UNEP/ILO/WHO, 1997.	T6 and TR1 have not been assigned in line with variations applied in the Hazardous substances (Dangerous Goods and Scheduled Toxic Substances) Transfer Notice 2006 (GN35) and the Hazardous Substances (Chemicals) Transfer Notice 2006 (GN72) This means that AH1 is not required for the 6.1C classification only the 3.1B where appropriate
Methanol, >18 - 25% in a non hazardous diluent	HSR006430	3.1C, **6.1E**, 6.4A, 6.8B, 6.9A	3.1C, **6.1D**, 6.4A, 6.8B, 6.9A		Controls to **add** based on change from 6.1E to 6.1D: I20
Methanol, >1 - 10% in a non hazardous diluent	HSR006431	6.8B, 6.9B	**6.1E**, 6.8B, 6.9B		Controls to **add** based on the addition of 6.1E EM1, EM6, I8, I30, T7

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
Aerosol containing 0.4 - 0.8% gentian violet and 3 - 7% oxytetracycline hydrochloride (Substance A)	HSR002117	6.4A, **9.1A**	6.4A, **9.1B**	**Changes to mixtures based on the change in the key study data and multiplying factors for the 9.1A classifiction of oxytetracycline hydrochloride.** The 9.1A crustacean classification of the active ingredient, oxytetracycline hydrochloride was previously changed from 9.1A (with multiplying factor) to 9.1C but the mixtures affected were not changed. It is the Algae 9.1A (without multiplying factor) classification that now drives the 9.1 classification for substances containing oxytetracycline hydrochloride.	No change to control codes. However, changes to labelling and safety data sheet information will be required.
Solid containing 50 - 80 g/kg didecyl dimethyl ammonium bromide and 80 - 120 g/kg oxytetracycline hydrochloride	HSR001782	6.1E, 6.5B, 8.2B, 8.3A, **9.1A**	6.1E, 6.5B, 8.2B, 8.3A, **9.1B**		
Aerosol containing 0.4 - 0.8% gentian violet and 3 - 7% oxytetracycline hydrochloride (Substance B)	HSR002149	6.3B, 6.4A, **9.1A**	6.3B, 6.4A, **9.1B**		
Liquid containing 0.2 - 0.4% bromhexine hydrochloride, 1 - 3% lignocaine and 3 - 7% oxytetracycline hydrochloride	HSR002204	6.3A, 6.4A, 6.5B, 6.6B, 6.7B 6.9B, **9.1A**	6.3A, 6.4A, 6.5B, 6.6B, 6.7B 6.9B, **9.1B**		
Cream containing 1 - 3% neomycin sulphate, 0.8 - 1.5% oleandomycin, 1 - 2.2% oxytetracycline hydrochloride and 0.02 -	HSR002170	6.5B , 6.9B, **9.1B**	6.5B , 6.9B, **9.1C**		

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
0.08% prednisolone					
Soluble concentrate containing 600 - 605 g/litre propamocarb	HSR000481	6.1E, 6.9B, 8.1A, 9.2B	6.1E, 6.9B, 8.1A, **9.1D**, 9.2B, **9.3C**	**Add 9.1D and 9.3C** **Changes to mixture classification based on the addition of 9.1D and 9.3C to the classifiction of propamocarb.** The active ingredient propamocarb is classified as 9.1D and 9.3C. Based on mixture rules (summation) 'Soluble concentrate containing 600-605 g/L propamocarb' should also be classified as 9.1D and 9.3C. Propamocarb does not have an approval for the pure chemical; therefore, it is only mixtures containing propamocarb that require approval changes. 9.1 classification cross referenced to Propamocarb hydrochloride, CAS# 25606-41-1 SPECIES: Eastern oyster TYPE OF EXPOSURE: DURATION: 96 hr ENDPOINT: EC50 VALUE: 43.9 mg/l REFERENCE SOURCE: [Pesticides Manual] 9.3 classification based on 6.1 data SPECIES: Mouse (F) ENDPOINT: LD50 VALUE: 1600 mg/kg	Controls to **add** based on the addition of 9.1D and 9.3C E4, EM11, EM12 Variation to EM12 **Regulation 36 of the Hazardous Substances (Classes 6, 8, and 9 Controls) Regulations 2001** This regulation applies as if there were added, after subclause (3), the following subclauses: (4) For the purposes of this regulation and regulations 37 to 40, any hazardous substance contained in pipework that is installed and operated so as to manage any loss of containment in the pipework— (a) is not to be taken into account in determining

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				REFERENCE SOURCE: Company data	whether a place is required to have a secondary containment system; and (b) is not required to be located in a secondary containment system. (5) In this clause, **pipework—** (a) means piping that— (i) is connected to a stationary container; and (ii) is used to transfer a hazardous substance into or out of the stationary container; and (b) includes a process pipeline or a transfer line.
Liquid containing 36 - 44% propetamphos	HSR001803	6.1C, 6.9A, 9.1A, 9.3B, 9.4A	**3.1D**, 6.1C, 6.9A, 9.1A, 9.3B, 9.4A	**Add 3.1D** This substance is not currently classified as a flammable class 3. However, flashpoint data for the substance shows a flashpoint of 73^{o} C which corresponds to a 3.1D classification.	Controls to **add** based on the addition of 3.1D D2, EM9, EM10, F2, F6, F11, GN35, I5, I13, I25, P5
Silane, dichlorodimethyl-, reaction products with silica	HSR003227	**6.9B**		**Remove 6.9B** The classification is based on an inhalation effect level at 35 mg/m3 resulting in granuloma-like lesions in the lung and other changes including alveolar bronchiolization and interstitial fibrosis. This effect	**All controls will be removed** as this substance no longer triggers a HSNO

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
CAS: 68611-44-9				level is equivalent to 0.035 mg/L, so in comparison with the Table 17/2 guidance values (ERMA, 2008), is appropriately 6.9B. The findings were confirmed in a 3 day and 8 – 12 month study at 50 mg/m3 in the follow up study the effects were reported as reversible. Information provided to the EPA is that the effects documented above only apply to the product in finally divided respiratory form and that the effect is reversible. The information supplied does not document alternative test result as such. Some of the effects reported in the original study at 35 mg/m3 (alveolar bronchiolization and interstitial fibrosis) appear unlikely to be reversible. Nevertheless the subsequent study at higher exposures (50 mg/m3) reported reversibility in surviving animals from the effects in the lung. Particle size In relation to the particle size, the studies need to use material of respirable size, and frequently the some products on the market will not be so finely divided. The classification assigned has still been applied in such circumstances. Reversibility of the effect For the biological effect to be significant it needs to continue after the conclusion of the exposure, so the removal of the 6.9B classification is supported on the basis that the effects seen in the follow up study at higher dose levels were reversible.	classification. The substance is non-hazardous under HSNO and no longer requires an approval.
Siloxanes and silicones, di-Me CAS: 63148-62-9	HSR003036	**6.4A**, 9.4A	9.4A	**Remove 6.4A** Current classification is based upon Klimisch score 3 and 4 information sources. The applicant has provided an OECD 405 study that demonstrates the following:	Controls to **delete** based on removal of 6.4A D4, EM6, I16, I28, P13, T1, T2, T4, T7 Proposed new control:

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				$\text{Mean Draize Score Conjunctival Redness} = \frac{1+1+2+1+1+1+1+1+2+1+1+1+1+0+1+1+1+1}{18} = 1.05$ Score is less than 2, therefore not classifiable for this end point $\text{Mean Draize Score Chemosis} = \frac{4+2+1}{18} = 0.38$ Score is less than 2, therefore not classifiable for this endpoint $\text{Mean Draize Score Iritis} = \frac{6+5+3}{18} = 0.8$ Score is less than 1, therefore not classifiable for this endpoint	The following controls do not apply to this substance unless the chemical is used in a pesticide formulation – *E2, E3, E5, E6, I3, I9, I11, I29, D7, EM1, EM7 , EM13.*
Siloxanes and silicones, di-Me, >10% in a non hazardous diluent	HSR006679	**6.4A**		$\text{Mean Draize Score Corneal Opacity} = 0$ Score is less than 1, therefore not classifiable for this endpoint Accordingly, the 6.4A classification should be removed.	**All controls will be removed** as this substance no longer triggers a HSNO classification.
Sodium bromide CAS: 7647-15-6	HSR003919	6.1E, **9.1A**	6.1E	**Remove 9.1A** The current information is based on bromine. However there is data for sodium bromide itself and this information should be used to classify sodium bromide. Based on information in US EPA ecotoxicity database and IUCLID dataset of sodium bromide the following ecotox key studies have been identified as relevant. AQUATIC ORGANISMS SPECIES: Bluegill sunfish TYPE OF EXPOSURE: static DURATION: 96 h ENDPOINT: LC50	Controls to **delete** based on the removal of 9.1A D5, E1, E2, E5, E6, E7, EM7, EM11. EM12 EM13, I3, I11, I23, I29, P3, P15, PG3 Controls to **add** PS4 Note AH1 and TR1 were originally deleted for this substance in the

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				VALUE: > 1000 mg/L REFERENCE SOURCE: IUCLID (2000) sodium bromide and US EPA ecotoxicity database SPECIES: Daphnia magna TYPE OF EXPOSURE: static DURATION: 48 h ENDPOINT: EC50 VALUE: > 1000 mg/L REFERENCE SOURCE: IUCLID (2000) sodium bromide and US EPA ecotoxicity database SPECIES: Scenedesmus pannonicus (algae) TYPE OF EXPOSURE: DURATION: 72 h ENDPOINT: LC50 VALUE: 8500 mg/L REFERENCE SOURCE: IUCLID (2000) sodium bromide Based on this data sodium bromide does not trigger any 9.1 classification. Sodium bromide is highly soluble in water and therefore poses no bioaccumulation hazard.	Hazardous substances (Chemicals) Transfer Notice 2006 (GN72)
Sodium fluoride	HSR003112		Changes to	**Remove the AH1 and TR1 controls** When the 6.1C classification was added under s67A in April 2007, the	Remove the T6, AH1 and

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
CAS: 7681-49-4			controls only	standard variation to the approved handler and tracking controls (variation code 8 and 19 in the Chemicals Gazette Notice) was not applied.	TR1 controls.
Sodium sulphide, anhydrous, or with less than 30% water of crystallisation CAS: 1313-82-2	HSR001300	4.2B, 6.1C, **8.2C**, 8.3A, 9.1A, 9.3B	4.2B, 6.1C, **8.2B**, 8.3A, 9.1A, 9.3B	**Change 8.2C to 8.2B** Sodium sulphide, anhydrous, or with less than 30% water of crystallisation has a 8.2C classification from DG Gazette Notice UN number 1385 Class 4.2 PG II Sodium sulphide, hydrated with not less than 30% water has a 8.2B classification from Chemicals Gazette Notice UN number 1849 Class 8 PGII There is no publicly available data indicating that the hydration status of sodium sulphide significantly affects its skin corrosive properties sufficiently to cause a 1 level difference in classification within the 8.2 class. Both compounds are strong alkalis and can be expected to produce severe skin injury on contact. Thus, sodium sulphide anhydrous should have a 8.2B classification. This is consistent with the EU CLP regulation classification.	No change to control codes. However, changes to labelling and safety data sheet information will be required.
Suspension concentrate containing 600 g/litre thiamethoxam	HSR000408	6.1E, 6.9B, 9.1D, 9.3C , 9.4A	6.1E, **6.5B**, 6.9B, 9.1D, 9.3C, 9.4A	**Add 6.5B** New formulation data is summarized below: SPECIES: Guinea pig ENDPOINT: Sensitisation (Buehler test) 9 - induction VALUE: Sensitiser KLIMISCH SCORE: 1 (reliable without restriction) GLP: Yes TEST GUIDELINES: OECD No 406	No change to control codes. However, changes to labelling and safety data sheet information will be required.

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				The study conclusion is that in accordance with EU Directive 2001/59/EC, the substance is a sensitiser. Based on this data a 6.5B classification should be assigned to the formulated product.	
Trimethoxyvinylsilane CAS: 2768-02-7	HSR004009	**3.1C**, 6.1D	**3.1B**, 6.1D	**Change 3.1C to 3.1B** The 3.1C classification was based on conversion of the R10 risk phrase; R10 does not directly convert to 3.1C but spans both the 3.1B and 3.1C classifications. Because the range covered by R10 lies many in the 3.1C classification this was made the default classification. After review of multiple SDS's, the following flashpoints were found: 22^{o}C http://fscimage.fishersci.com/msds/85397.htm 73^{o}F = 22.8^{o}C http://www.chemicalbook.com/ProductChemicalPropertiesCB1167841_EN.htm 23°C (73°F) http://www.labseeker.com/ChemicalBiotech/msds/Gelest/SIV/SIV92200.pdf 22 deg C (71.60 deg F) http://www.chemcas.com/AnalyticalDetail.asp?pidx=1&id=18135&cas=2768-02-7&page=454 All SDS's gave a flashpoint consistent with a 3.1B classification.	Controls to **add** based on the change from 3.1C to 3.1B AH1, F4, PG2 Add variation code 1 from Hazardous substances (Chemicals) Transfer Notice 2006 (GN72) Controls to r**emove** PG3
Zinc sulphate, heptahydrate CAS: 7446-20-0	HSR003701	6.1D, 6.9B, 8.3A, 9.1A, **9.2C**, 9.3C	6.1D, 6.9B, 8.3A, 9.1A, 9.3C	**Remove 9.2C** The key study for the 9.2 classification of this substance is the same for zinc sulphate monohydrate. However, while this substance has a	No change to control codes. However, changes to labelling and safety data sheet

Substances affected (Name and CAS #)	Approval Number	Current classification	New classification	Justification for Change	Effect on controls
				9.2C classification, zinc sulphate monohydrate does not. While there is a very large range of toxicity values for zinc in soil, approximately 200 mg/kg for normal soil conditions is a reasonable threshold limit (this would be equivalent to NO). The key study originally used for classification involved low clay and acid soil (pH 4), conditions that would cause high zinc toxicity. Given the large amount of data available for zinc, a weight of evidence approach is needed with the data prioritised for more typical soil conditions. On this basis the 9.2C classification should be removed from zinc sulphate, heptahydrate.	information will be required.

Appendix 3: Confidential substances

Substances affected	Justification for Change
Substance A	Remove 6.8B. Based on the removal of the 68B classification of Benzene, C10-13-alkyl derivs., HSR003725
Substance B	Remove 6.8B. Based on the removal of the 68B classification of Benzene, C10-13-alkyl derivs., HSR003725
Substance C	Remove 6.8B. Based on the removal of the 68B classification of Benzene, C10-13-alkyl derivs., HSR003725
Substance D	Remove 6.3B Based on the removal of the 6.3A classification for Magnesium chloride, HSR002764
Substance E	Change 6.1D to 6.1C Based on the change from 6.1D to 6.1C (dermal) classification for methanol
Substance F	Remove 6.4A. Based on the removal of the 6.4A classification of Siloxanes and silicones, di-Me, HSR003036
Substance G	Remove 6.4A. Based on the removal of the 6.4A classification of Siloxanes and silicones, di-Me, HSR003036

Substance H	Remove 6.4A. Based on the removal of the 6.4A classification of Siloxanes and silicones, di-Me, HSR003036
Substance I	Change 9.3B to 9.3C Based on the change from 9.3B to 9.3C for ethanol, 2-butoxy HSR001154
Substance J	Change 6.1C to 6.1D and 9.3B to 9.3C Based on the change from 9.3B to 9.3C for ethanol, 2-butoxy HSR001154
Substance K	Change 6.1C to 6.1D Based on the change in the 6.1 exposure routes classifications for ethanol, 2-butoxy HSR001154