APPENDIX 2

Table A – National classification schemes for physicochemical properties

Physicochemical property	NOHSC Approved Criteria	APVMA (household pesticides)	ADG Code
EXPLOSIVE			
Potency grading	Yes Risk of explosion by shock, friction, fire or other sources of ignition: includes substances and preparations except those set out below or Extreme risk of explosion by shock, friction, fire or other sources of ignition: includes substances and preparations that are particularly sensitive such as picric acid salts or PETN	Required - classification as per the ADG if applicable	Yes Class 1.1: Substances and articles that have a mass explosion hazard Class 1.2: Substances and articles that have a projection hazard but not a mass explosion hazard Class 1.3: Substances and articles that have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard Class 1.4: Substances and articles that present no significant hazard Class 1.5: Very insensitive substances that have no mass explosion hazard Class 1.6: Extremely insensitive articles that do not have a mass explosion hazard
Delineation/low hazard definition	No	No	No
Qualitative or quantitative	Qualitative	Qualitative	Qualitative
OXIDISING			
Potency grading	Yes May cause fire: organic peroxides which have flammable properties even when not in contact with other combustible material or Contact with combustible material may cause fire: other oxidising substances and preparations, including inorganic peroxides, which may cause fire or enhance the risk of fire when in contact with combustible material or Explosive when mixed with combustible material: other oxidising substances and preparations, including inorganic peroxides, which become explosive when mixed with combustible materials eg. certain chlorates	Required - classification as per the ADG if applicable	No Class 5.1 - Oxidising substance: while in themselves not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material Class 5.2 - Organic peroxides: thermally unstable substances, that may undergo exothermic self-accelerating decomposition, and have one or more of the following properties: be liable to explosive decomposition; to burn rapidly; to be sensitive to impact or friction; to react dangerously with other substances; or to cause damage to the eyes
Delineation/low hazard definition	No	No	No
Qualitative or quantitative	Qualitative	Qualitative	Qualitative

Physicochemical property	NOHSC Approved Criteria	APVMA (household pesticides)	ADG Code
FLAMMABLE			
Potency grading	Yes Extremely flammable: Liquid - Flash pt < 0 °C and a boiling pt ≤ 35 °C Gas - Flammable in contact with air at ambient temperature and pressure Highly flammable: Liquid - Flash point < 21 °C but are not extremely flammable Solid – may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition Substances - in contact with water or damp air, evolve extremely flammable gases in dangerous quantities at a minimum rate of 1L/kg/hr Substances - may become hot and finally catch fire in contact with air at ambient temperature without any input of energy Flammable: Liquid - ≥ 21 °C and ≤ 55 °C	Required - classification as per the ADG if applicable	No Class 3 - Flammable liquids: that give off a flammable vapour at temperatures of ≤ 60.5 °C closed-cup test, or ≤ 65.6 °C open-cup test; normally referred to as the flash point Class 2.1 - Flammable gases: at 20 °C and a standard pressure of 101.3 kPa either ignite when in a mixture of 13% or less by volume with air, or have a flammable range with air of at least 12 percentage points, regardless of the lower flammable limit. Class 2.2 - Non-flammable (non-toxic) gases: that are transported at a pressure not less than 280kPa at 20 °C, or as refrigerated liquids Class 4.1 - Flammable solids: under conditions encountered in transport are readily combustible or may cause or contribute to fire through friction; self reactive and related substances that are likely to undergo a strongly exothermic reaction; and desensitised explosives that may explode if not diluted sufficiently
Delineation/low hazard definition	No	No	No
Qualitative or quantitative	Quantitative for liquids, qualitative for gases and solids	Quantitative for liquids and gases, qualitative for solids	Quantitative for liquids and gases, qualitative for solids
OTHER PROPERTIES:		-	-
Potency grading	No • Explosive when dry • Forms very sensitive explosive metallic compounds • Heating may cause an explosion • Explosive with or without contact with air • May cause fire • Reacts violently with water • Explosive when mixed with oxidising substances • In use, may form flammable/ explosive vapour-air mixture • May form explosive peroxides • Can become highly flammable in use • Risk of explosion if heated under confinement	Required - classification as per the ADG if applicable	No • Class 4.2 - (Solids) liable to spontaneous combustion • Class 4.3 - (Solids) that in contact with water emit flammable gases
Delineation/low hazard definition	No - for any of these properties	No - for any of these properties	No - for any of these properties
Qualitative or quantitative	Qualitative (all)	Qualitative (all)	Qualitative (all)

Table B – International classification schemes for physicochemical properties

Physicochemical property	EU	GHS	NZ
EXPLOSIVE			
Potency grading	Yes Risk of explosion by shock, friction, fire or other sources of ignition: includes substances and preparations except those set out below or Extreme risk of explosion by shock, friction, fire or other sources of ignition: includes substances and preparations that are particularly sensitive such as picric acid salts or PETN	Yes Division 1.1: Substances, mixtures and articles which have a mass explosion hazard Division 1.2: Substances, mixtures and articles which have a projection hazard but not a mass explosion hazard Division 1.3: Substances, mixtures and articles which have a fire hazard and either a minor blast hazard or a minor projection hazard or both, but not a mass explosion hazard Division 1.4: Substances, mixtures and articles which present no significant hazard Division 1.5: Very insensitive substances or mixtures which have a mass explosion hazard Division 1.6: Extremely insensitive articles which do not have a mass explosion hazard	Yes – as GHS
Delineation/low hazard definition	No	No	**Yes** – Division 1.4 in the GHS classification scheme is considered a low hazard
Qualitative or quantitative	Qualitative	Qualitative	Qualitative
OXIDISING			
Potency grading	Yes May cause fire: organic peroxides which have flammable properties even when not in contact with other combustible material or Contact with combustible material may cause fire: other oxidising substances and preparations, including inorganic peroxides, which may cause fire or enhance the risk of fire when in contact with combustible material or Explosive when mixed with combustible material: other oxidising substances and preparations, including inorganic peroxides, which become explosive when mixed with combustible materials eg. certain chlorates	Yes – for liquids and solids, but not gases Oxidising Liquids: Cat. 1: the 1:1 mixture, by mass, and cellulose tested, spontaneously ignites; or the mean pressure rise time of a 1:1 mixture by mass, of substance and cellulose is less than that of a 1:1 mixture, by mass, of 50 % perchloric acid and cellulose Cat. 2: the 1:1 mixture, by mass, and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture by mass, of 40 % aqueous sodium chlorate solution and cellulose; and the criteria for Cat. 1 are not met Cat. 3: the 1:1 mixture, by mass, and cellulose tested, exhibits a mean pressure rise time less than or equal to the mean pressure rise time of a 1:1 mixture by mass, of 65 % aqueous nitric acid and cellulose; and the criteria for Cat. 1 and 2 are not met	Yes – as GHS

Physicochemical property	EU	GHS	NZ
		Oxidising Solids: Cat. 1: when tested in a 4:1 or 1:1 sample-to-cellulose ration (by mass), exhibits a mean burning time less than the mean burning time of a 3:2 mixture, by mass, of potassium bromate and cellulose Cat. 2: when tested in a 4:1 or 1:1 sample-to-cellulose ration (by mass), exhibits a mean burning time equal to or less than the mean burning time of a 2:3 mixture, by mass, of potassium bromate and cellulose and the criteria for Cat. 1 are not met Cat. 3: when tested in a 4:1 or 1:1 sample-to-cellulose ration (by mass), exhibits a mean burning time equal to or less than the mean burning time of a 3:7 mixture, by mass, of potassium bromate and cellulose and the criteria for Cat. 1 and 2 are not met Oxidising Gas: may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does.	
Delineation/low hazard definition **Qualitative or quantitative**	No Qualitative	No Essentially qualitative	No Essentially qualitative
FLAMMABLE **Potency grading**	Yes Extremely flammable: Liquid - Flash pt < 0 °C and a boiling pt ≤ 35 °C Gas - Flammable in contact with air at ambient temperature and pressure Highly flammable: Liquid - Flash point < 21 °C but are not extremely flammable Solid – may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition Substances - in contact with water or damp air, evolve extremely flammable gases in dangerous quantities at a minimum rate of 1L/kg/hr Substances - may become hot and finally catch fire in contact with air at ambient temperature without any input of energy Flammable: Liquid – Flash point ≥ 21 °C and ≤ 55 °C	Yes Flammable Liquid Cat. 1: Flash point < 23 °C and initial boiling point ≤ 35 °C Flammable Liquid Cat. 2: Flash point < 23 °C and initial boiling point > 35 °C Flammable Liquid Cat. 3: Flash point ≥23 °C and ≤ 60 °C Flammable Liquid Cat. 4: Flash point > 60 °C and ≤ 93 °C Flammable Gases Cat. 1: at 20 °C and a standard pressure of 101.3 kPa and are ignitable when in a mixture of 13% or less by volume in air or have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit. Flammable Gases Cat. 2: other than those of Category 1, which, at 20 °C and a standard pressure of 101.3 kPa, have a flammable range while mixed in air.	Yes – as GHS

Physicochemical property	EU	GHS	NZ
		Flammable Aerosol Cat. 1 Flammable Aerosol Cat.2 -classified into Cat 1 or 2 on the basis of its components, of its chemical heat of combustion and, if applicable, of the results of the foam test, for foam aerosols, and of the ignition distance test and enclosed space test, for spray aerosols Flammable Solid Cat. 1: Burning rate test for solids other than metal powders: wetted zone does not stop fire and the burning time < 45 s or burning rate > 2.2 mm/s. Burning rate test for metal powders: burning time ≤5 min Flammable Solid Cat. 2: Burning rate test for solids other than metal powders: wetted zone stops the fire for at least 4 min and the burning time < 45 seconds or burning rate > 2.2 mm/second. Burning rate test for metal powders: burning time > 5 minutes and ≤10 minutes.	
Delineation/low hazard definition	No	No	**Yes** – Flammable Liquid Cat. 4, Flammable Gases Cat. 2, Flammable Aerosol Cat.1, and Flammable Solid Cat. 2 in the GHS classification scheme are all considered to be a low hazard
Qualitative or quantitative	Quantitative for liquids, qualitative for gases and solids	Quantitative for liquids, and essentially quantitative for gases, aerosols and solids	Quantitative for liquids, and essentially quantitative for gases, aerosols and solids
OTHER PROPERTIES: **Potency grading**	No • Explosive when dry • Forms very sensitive explosive metallic compounds • Heating may cause an explosion • Explosive with or without contact with air • May cause fire • Reacts violently with water • Explosive when mixed with oxidising substances • In use, may form flammable/ explosive vapour-air mixture • May form explosive peroxides	No • Pyrophoric liquids • Pyrophoric solids • Corrosive to metals Yes • Self-reactive substances and mixtures[1] Type A: Heating may cause an explosion Type B: Heating may cause a fire or explosion Type C: Heating may cause a fire Type D: Heating may cause a fire Type E: Heating may cause a fire	No – as GHS for: • Metallic corrosives Yes – as GHS for: • Self-reactive substances • Organic peroxides • Dangerous when wet substances

Physicochemical property	EU	GHS	NZ
	• Can become highly flammable in use • Risk of explosion if heated under confinement	Type F: Heating may cause a fire Type G: (no hazard statement) • Organic peroxides[1] Type A: Heating may cause an explosion Type B: Heating may cause a fire or explosion Type C: Heating may cause a fire Type D: Heating may cause a fire Type E: Heating may cause a fire Type F: Heating may cause a fire Type G: (no hazard statement) • Self –heating substances and mixtures Cat. 1: Self-heating; may catch fire Cat. 2: Self-heating in large quantities; may catch fire • Substances and mixtures which, in contact with water, emit flammable gases[1] Cat. 1: In contact with water releases flammable gases which may ignite spontaneously Cat. 2: In contact with water releases flammable gases Cat. 3: In contact with water releases flammable gases	
Delineation/low hazard definition	No - for any of these properties	No	**Yes** – Self-reactive substances Type G, Organic peroxides Type G, and Dangerous when wet Cat. 3 in the GHS classification scheme are all considered to be a low hazard
Qualitative or quantitative	Qualitative	Qualitative for self-reactive substances and mixtures and essentially qualitative for all other properties	Qualitative for self-reactive substances and mixtures and essentially qualitative for all other properties

[1] The classification criteria for each degree of hazard for this endpoint are available at http://www.unece.org/trans/danger/publi/ghs/ghs_rev01/01files_e.html