

APPENDIX G. Summary of Ecotoxicity Data for Methomyl

TABLE 1. Available Toxicity Data for Methomyl (Excluding Invalid Studies):

<i>TAXON</i>	<i>ENDPOINT</i>	<i>FORMULATION</i>	<i>MRID</i>	<i>STUDY CLASS-IFICATION</i>	<i>COMMENTS</i>
BIRDS					
Birds (Acute)					
Bobwhite quail (Colinus virginianus)	LD ₅₀ = 24.2 mg a.i./kg-bw	TGAI	00161886	Acceptable	None
Birds (Acute/Sub-Acute)					
Mallard duck (Anas platyrhynchos)	96-hr LC ₅₀ = 3,602 mg a.i./kg=diet	TGAI	45299802	Acceptable	None
Mallard duck (Anas platyrhynchos)	96-hr LC ₅₀ = 2,883 mg a.i./kg=diet	TGAI	22923	Acceptable	None
Bobwhite quail (Colinus virginianus)	96-hr LC ₅₀ = 5,080 mg a.i./kg=diet	TGAI	45299801	Acceptable	None
Bobwhite quail (Colinus virginianus)	96-hr LC ₅₀ = 1,100 mg a.i./kg=diet	TGAI	22923	Acceptable	None
Ring-necked Pheasant (Phasianus colchicus)	96-hr LC ₅₀ = 1,975 mg a.i./kg=diet	TGAI	22923	Acceptable	None
Birds (Chronic)					
Bobwhite quail (Colinus virginianus)	NOAEC = 150 mg a.i./kg-diet LOAEC = 500 mg a.i./kg-diet	TGAI	41898602	Acceptable	LOAEC based on fewer eggs laid and fewer eggs set
MAMMALS					
Mammals (Acute)					
Rat (Rattus rattus)	LD ₅₀ = 30 mg/kg-bw	TGAI	42140101	Acceptable	None
Mammals (Chronic)					
Rat (Rattus rattus)	NOAEL = 3.75 mg/kg-bw LOAEL = 30 mg/kg-bw	TGAI	43250701, 43769401	Acceptable	LOAEL is based on decreased body weight and food consumption and altered hematology parameters
TERRESTRIAL INVERTEBRATES					
Honey bee (Apis mellifera)	48-hr LD ₅₀ = 0.28 µg a.i./bee	TGAI	45093001	Acceptable	Acute oral study
Honey bee (Apis mellifera)	48-hr LD ₅₀ = 0.16 µg a.i./bee	TGAI	45093001	Acceptable	Acute contact study
Wasp (Aphidius rhopalosiphii)	48-hr LC ₅₀ = 0.00027 lbs a.i./acre	Formulation (Methomyl® 25WP)	45133302	Supplemental	Supplemental (non-guideline, but scientifically sound)
Wasp (Aphidius)	48-hr LC ₅₀ =	Formulation	45133301	Supplemental	Supplemental

TAXON	ENDPOINT	FORMULATION	MRID	STUDY CLASS-IFICATION	COMMENTS
rhopalosiphi)	0.00022 lbs a.i./acre	(Methomyl® 20L)			(non-guideline, but scientifically sound)
Mite (Typhlodromus pyri)	7-day LC ₅₀ = 0.0114 lbs a.i./acre	Formulation (Methomyl® 20L)	45125501	Supplemental	Supplemental (non-guideline, but scientifically sound)
Mite (Typhlodromus pyri)	7-day LC ₅₀ = 0.01115 lbs a.i./acre	Formulation (Methomyl® 25WP)	45125502	Supplemental	Supplemental (non-guideline, but scientifically sound)
Earthworms (Eisenia fetida)	28-day LC ₅₀ = > 12 mg a.i./kg dry soil (no mortalities at highest treatment concentration)	Formulation (Methomyl® 20L)	45459201	Supplemental	Supplemental (non-guideline, but scientifically sound)
Earthworms (Eisenia fetida)	14-day LC ₅₀ = 23 mg a.i./kg dry soil	TGAI	44969301	Supplemental	Supplemental (non-guideline, but scientifically sound)
FRESHWATER FISH					
Freshwater Fish (Acute)					
See Appendix J					
Freshwater Fish (Chronic)					
Fathead minnow (Pimephales promelas)	NOAEC = 0.057 mg a.i./L LOAEC = 0.117 mg a.i./L	TGAI (>99%)	131255	Acceptable	Early life-stage; LOAEC based on reduced survival.
Fathead minnow (Pimephales promelas)	NOAEC = 0.076 mg a.i./L LOAEC = 0.142 mg a.i./L	TGAI (>99%)	43072101	Acceptable	Full life-cycle; LOAEC based on reduced growth of the parental and F ₁ generation fish
ESTUARINE/MARINE FISH					
Estuarine/Marine Fish (Acute)					
Sheepshead minnow (Cyprinodon variegates)	LC ₅₀ = 1.16 mg a.i./L	TGAI (98.4%)	45013202	Acceptable	None
Estuarine/Marine Fish (Chronic)					
Sheepshead minnow (Cyprinodon variegates)	NOAEC = 0.260 mg a.i./L LOAEC = 0.490 mg a.i./L	TGAI (98.6%)	45013202	Acceptable	LOAEC based on reduction in total length and wet weight.
FRESHWATER INVERTEBRATES					
Freshwater Invertebrates (Acute)					
See Appendix J					
Freshwater Invertebrates (Chronic)					
Daphnid (Daphnia magna)	NOAEC = 0.0007 mg a.i./L LOAEC = 0.001	TGAI (>99%)	131254	Acceptable	LOAEC based on delayed reproduction

TAXON	ENDPOINT	FORMULATION	MRID	STUDY CLASS- IFICATION	COMMENTS
	<i>mg a.i./L</i>				
ESTUARINE/MARINE INVERTEBRATES					
<i>Estuarine/Marine Invertebrate (Acute)</i>					
<i>Northern pink shrimp (Penaeus duorarum)</i>	$LC_{50} = 0.019$ <i>mg a.i./L</i>	<i>TGAI (90%)</i>	<i>00009134</i>	<i>Acceptable</i>	<i>None</i>
<i>Mysid (Americamysis bahia)</i>	$LC_{50} = 0.234$ <i>mg a.i./L</i>	<i>TGAI (98.4%)</i>	<i>41441201</i>	<i>Acceptable</i>	<i>None</i>
<i>Grass shrimp (Palaemonetes vulgaris)</i>	$LC_{50} = 0.049$ <i>mg a.i./L</i>	<i>TGAI (90%)</i>	<i>00009134</i>	<i>Acceptable</i>	<i>None</i>
<i>Eastern oyster (Crassostrea virginica)</i>	$LC_{50} = >140$ <i>mg a.i./L</i>	<i>TGAI (98.4%)</i>	<i>42074601</i>	<i>Acceptable</i>	<i>Shell deposition study</i>
<i>Mud crab (Neopanope texana)</i>	$EC_{50} = 0.41$ <i>mg a.i./L</i>	<i>TGAI (90%)</i>	<i>00009134</i>	<i>Acceptable</i>	<i>None</i>
<i>Estuarine/Marine Invertebrate (Chronic)</i>					
<i>Mysid (Americamysis bahia)</i>	$NOAEC = 0.029$ <i>mg a.i./L</i> $LOAEC = 0.59$ <i>mg a.i./L</i>	<i>TGAI (98.6%)</i>	<i>45013203</i>	<i>Supplemental</i>	<i>LOAEC based on reduced number of young per surviving female</i>