



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF  
CHEMICAL SAFETY AND  
POLLUTION PREVENTION

**Memorandum**

DATE: July 26, 2017

SUBJECT: Transmission of Background Materials on the Physiologically Based Pharmacokinetic/Pharmacodynamic (PBPK/PD) Model on Malathion to the Panel for the October 24 - 27, 2017 Session of the FIFRA Scientific Advisory Panel (FIFRA SAP) Reviewing PBPK Modeling to Address Pharmacokinetic Differences Between and Within Species

TO: Steven Knott  
Acting Executive Secretary  
FIFRA Scientific Advisory Panel Staff  
Office of Science Coordination and Policy

FROM: Dana Vogel, Director  
Health Effects Division  
Office of Pesticide Programs

A handwritten signature in blue ink, likely belonging to Dana Vogel, is positioned to the right of the "FROM:" line. The signature is fluid and cursive, extending horizontally across the page.

Transmitted with this memo are copies of all background documents and model files for the physiologically based pharmacokinetic/pharmacodynamic model of malathion from the FMC to the Panel for the October 24 through 27, 2017 session of the FIFRA SAP reviewing Physiologically Based Pharmacokinetic (PBPK) Modeling to Address Pharmacokinetic Differences Between and Within Species. These documents do not contain any information protected under statute as Confidential Business Information (CBI). These materials do not contain information which may be proprietary in nature and/or are protected from disclosure to foreign and multi-national pesticide producers under FIFRA Section 10(g). In addition, these materials do not include information protected by copyright. The attached documents have completed QA/QC review and are listed below in the attached Tables 1 and 2.

Attachment

**Table 1: Transmission of background materials on the physiologically based pharmacokinetic/pharmacodynamic (PBPK/PD) model for Malathion to the panel for the October 24 - 27, 2017 session of the FIFRA Scientific Advisory Panel (FIFRA SAP) reviewing PBPK Modeling to address pharmacokinetic differences between and within species**

Document Title	Author(s)	Date	FIFRA 10(g) or © Protected (designate as)	QA/QC (mark w/ X)	Master Record Identification Number (MRID)*
PBPK-PD Models for Malathion Final.pdf	Reiss, R., A. Loccisano, C. Kampmeyer	07-07-2017	Waived	X	N/A
PBPK letter to EPA – 10g waiver – FINAL – July 25 2017.pdf	FMC	07-25-2017	Waived	X	N/A
Determination of Residue of Malathion Dicarboxylic Acid (DCA), Malathion Monocarboxylic Acid (MCA), Dimethyl Phosphate (DMP), Dimethyl Thiophosphate (DMTP), and Dimethyl Dithiophosphate (DMDTP) in Human Urine (file name: Aston 2000.pdf)	Aston, L	2000	Waived	X	45244601
A Randomised Double Blind Ascending Single Oral Dose Study with Malathion to Determine the No Effect Level on Plasma and RBC Cholinesterase Activity (file names: Gillies and Dickson 2000 (Part 1).pdf, Gillies and Dickson 2000 (Part 2).pdf)	Gillies, D and J. Dickson	2000	Waived	X (two files)	45125602
Oral (Gavage) Repeat Dose Comparative Cholinesterase Study of Malathion and Malaoxon in Juvenile Rats (file name: Barnett 2006a.pdf)	Barnett, J	2006a	Waived	X	46822201
Oral (gavage) Repeat Dose Time of Peak Cholinesterase Depression Study of Malathion and Malaoxon in Juvenile Rats (file name: Barnett 2006b.pdf)	Barnett, J	2006b	Waived	X	46825502
Oral (gavage) Acute Dose Time of Peak Cholinesterase Depression Study of Malathion in Juvenile Rat (file name: Barnett 2008a.pdf)	Barnett, J	2008a	Waived	X	47373702

Document Title	Author(s)	Date	FIFRA 10(g) or © Protected (designate as)	QA/QC (mark w/ X)	Master Record Identification Number (MRID)*
Oral (gavage) Acute Dose Comparative Cholinesterase Study of Malathion and Malaoxon in Juvenile Rats: Final Study (file name: Barnett 2008b.pdf)	Barnett, J	2008b	Waived	X	47373704
Oral (Diet) Repeated Dose 90-day Toxicity Study of Malathion Technical in Rats (file name: Barnett 2012a.pdf)	Barnett, J	2012a	Waived	X	49035701
Oral (Diet) Repeated Dose 28-day Toxicity Study of Malathion Technical in Rats (file name: Barnett 2012b.pdf)	Barnett, J	2012b	Waived	X	49035701
A 24-month oral toxicity/oncogenicity study of malaoxon in the rat via dietary administration (Volume 1 only) (file name: Daly 1996.pdf)	Daly, I	1996	Waived	X	43975201
Malathion: Effects on Cholinesterase in the CD Rat (Adult and Juvenile) by Oral Gavage Administration (file name: Fulcher 2001.pdf)	Fulcher, S	2001	Waived	X	45566201
[14C]-Malathion: The Pharmacokinetics of [14C] Malathion in the Rat Following Single Oral and Intravenous Administration (file name: Libberton 2017.pdf)	Libberton, M	2017	Waived	X	50301401
Disposition and Metabolism of 14C-Labeled Malathion in Rats (Preliminary and Definitive Study) (file name: Reddy 1989.pdf)	Reddy, V., T. Freeman and M. Cannon	1989	Waived	X	41367701
Study Protocol: Inhibition kinetics of six organophosphate compounds on human and rat erythrocyte acetylcholinesterase (file name: Chambers and Meek 2016.docs)	Chambers, J.	2016	Waived	X	N/A

\*If applicable

**Table 2: Transmission of files related to the physiologically based pharmacokinetic/pharmacodynamic (PBPK/PD) model for Malathion to the panel for the October 24 - 27, 2017 session of the FIFRA Scientific Advisory Panel (FIFRA SAP) reviewing PBPK modeling to address pharmacokinetic differences between and within species. File extensions for files with a .txt extension need to be changed as indicated in the instructions\_for\_running\_malathion\_models.docx in order for these model files to run in acslX (.csl and .m files); or .txt extension need to be removed (.csv and .xls files).**

Document Title	Author(s)	Date	FIFRA 10(g) or © Protected (designate as)	QA/QC (mark w/ X)	Master Record Identification Number (MRID)*	Simulation Scenarios	Additional Instruction
instructions_for_running_malathion_models.docx	Loccisano and Reiss	7-21-2017	Waived	X	N/A	N/A	Instruction for running the model simulations
adult_rat.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	acslX code for adult rat model	Change the file extension to .csl to run
rat_parameters.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Parameters for adult rat model	For use with adult_rat.csl, change file extension to .m to run
Bradway_metabolites.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates oral doses and excretion of MCA + DCA metabolites (Bradway & Shafik 1977 study)	For use with adult_rat.csl, change file extension to .m to run
Bradway_dosing.xls	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Doses for Bradway study	For use with Bradway_metabolites.m
Bradway_metabolites_high_dose.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed data from Bradway study—high dose	For use with Bradway_metabolites.m, remove .txt
Bradway_metabolites_mi	Loccisano	7-21-2017	Waived	X	N/A	Observed data	For use with

Document Title	Author(s)	Date	FIFRA 10(g) or © Protected (designate as)	QA/QC (mark w/ X)	Master Record Identification Number (MRID)*	Simulation Scenarios	Additional Instruction
d_dose.csv.txt	and Reiss					from Bradway study—mid dose	Bradway_metabolites.m , remove .txt
Bradway_metabolites_lo w_dose.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed data from Bradway study—low dose	For use with Bradway_metabolites., remove .txt
Ryan_metabolites.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates oral dose of 250 mg/kg and concentration of MCA + DCA and malathion in blood (Ryan and Fukuto 1985 study)	For use with adult_rat.csl, change file extension to .m to run
Ryan_metabolite_data.csv .txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed data from Ryan study	For use with Ryan_metabolites.m, remove .txt
Barnett_2012a.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE inhibition resulting from 90 days of oral dosing with malathion	For use with adult_rat.csl, change file extension to .m to run
Barnett_2012a_dosing.xls .txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Doses in ug/kg for 90 days in males and females	For use with Barnett_2012a.m, remove .txt
Barnett2012a_90days_1.c	Loccisano	7-21-2017	Waived	X	N/A	Observed AChE	For use with

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sv.txt	and Reiss					inhibition data for 100 ppm dose	Barnett_2012a.m, remove .txt
Barnett2012a_90days_2.c sv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed AChE inhibition data for 500 ppm dose	For use with Barnett_2012a.m, remove .txt
Barnett2012a_90days_3.c sv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed AChE inhibition data for 5000 ppm dose	For use with Barnett_2012a.m, remove .txt
Barnett2012a_90days_4.c sv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed AChE inhibition data for 1000 ppm dose	For use with Barnett_2012a.m, remove .txt
Barnett_2012b.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE inhibition resulting from 28 days of oral dosing with malathion	For use with adult_rat.csl, change file extension to .m to run
Barnett_2012b_dosing.xls .txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Doses in ug/kg for 28 days in males and females	For use with Barnett_2012b.m, remove .txt
Barnett2012b_28days_1.c sv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed AChE inhibition data for 100 ppm	For use with Barnett_2012b.m, remove .txt

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						dose	
Barnett2012b_28days_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed AChE inhibition data for 500 ppm dose	For use with Barnett_2012b.m, remove .txt
Barnett2012b_28days_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed AChE inhibition data for 5000 ppm dose	For use with Barnett_2012b.m, remove .txt
Barnett2012b_28days_4.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed AChE inhibition data for 10000 ppm dose	For use with Barnett_2012b.m, remove .txt
Huntington_2001_single_dose.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE and plasma BuChE inhibition resulting from single doses of malathion	For use with adult_rat.csl, change file extension to .m to run
Huntington_2001_singledose_1.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 5 mg/kg dose	For use with Huntington_2001_singl e_dose.m, remove .txt
Huntington_2001_singledose_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 50 mg/kg dose	For use with Huntington_2001_singl e_dose.m, remove .txt
Huntington_2001_singledose_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data	For use with Huntington_2001_singl

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						for 150 mg/kg dose	e_dose.m, remove .txt
Huntington_2001_singled ose_4.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 450 mg/kg dose	For use with Huntington_2001_singl e_dose.m, remove .txt
Huntington_2001_repeat _dose.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE and plasma BuChE inhibition resulting from 11 doses of malathion	For use with adult_rat.csl, change file extension to .m to run
Huntington_2001_repeat dose_1.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 5 mg/kg dose	For use with Huntington_2001_repe at_dose.m, remove .txt
Huntington_2001_repeat dose_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 50 mg/kg dose	For use with Huntington_2001_repe at_dose.m, remove .txt
Huntington_2001_repeat dose_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 150 mg/kg dose	For use with Huntington_2001_repe at_dose.m, remove .txt
oxon_90days.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE inhibition resulting from 90 days of oral	For use with adult_rat.csl, change file extension to .m to run



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						dosing with oxon	
oxon_dosing_90_days_3. xls.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Doses in ug/kg for 90 days in males and females	For use with oxon_90days.m, remove .txt
oxon_90days_1.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 20 ppm dose	For use with oxon_90days.m, remove .txt
oxon_90days_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 1000 ppm dose	For use with oxon_90days.m, remove .txt
oxon_90days_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 2000 ppm dose	For use with oxon_90days.m, remove .txt
FMC_metabolites.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates MCA + DCA in blood resulting from single oral dose	For use with adult_rat.csl, change file extension to .m to run
FMC_metabolites.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed data from FMC study	For use with FMC_metabolites.m, remove .txt
postnatal_rat.csl	Loccisano and Reiss	7-21-2017	Waived	X	N/A	acslX code for postnatal rat model	Change the file extension to .csl to run
rat_parameters_postnatal. txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Parameters for postnatal rat model	For use with postnatal_rat.csl, change file extension to

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							.m to run
Barnett_2006.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE inhibition resulting from 11 days of oral dosing with malathion or oxon	For use with postnatal_rat.csl, change file extension to .m to run
Barnett_2006_dosing.xls. txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Doses for malathion and oxon in ug/kg for 11 days in postnatal rats	For use with Barnett_2006.m, remove .txt
Barnett_2006_repeatdose _mal_1.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 5 mg/kg dose of malathion	For use with Barnett_2006.m, remove .txt
Barnett_2006_repeatdose _mal_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 25 mg/kg dose of malathion	For use with Barnett_2006.m, remove .txt
Barnett_2006_repeatdose _mal_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 50 mg/kg dose of malathion	For use with Barnett_2006.m, remove .txt
Barnett_2006_repeatdose	Loccisano	7-21-2017	Waived	X	N/A	Observed	For use with

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_mal_4.csv.txt	and Reiss					inhibition data for 150 mg/kg dose of malathion	Barnett_2006.m, remove .txt
Barnett_2006_repeatdose _oxon_1.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 0.1 mg/kg dose of oxon	For use with Barnett_2006.m, remove .txt
Barnett_2006_repeatdose _oxon_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 1 mg/kg dose of oxon	For use with Barnett_2006.m, remove .txt
Barnett_2006_repeatdose _oxon_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 2.5 mg/kg dose of oxon	For use with Barnett_2006.m, remove .txt
Barnett_2006_repeatdose _oxon_4.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 4 mg/kg dose of oxon	For use with Barnett_2006.m, remove .txt
Barnett_2008a.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC inhibition resulting from single oral dose of 150 mg/kg malathion	For use with postnatal_rat.csl, change file extension to .m to run
Barnett_2008a_PND11_s ingle_dose.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data	For use with Barnett_2008a.m,

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							remove .txt
Barnett_2008b.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC inhibition resulting from single oral doses of malathion or oxon	For use with postnatal_rat.csl, change file extension to .m to run
Barnett_2008b_singledos e_mal_1.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 10 mg/kg dose of malathion	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_mal_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 25 mg/kg dose of malathion	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_mal_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 50 mg/kg dose of malathion	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_mal_4.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 100 mg/kg dose of malathion	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos	Loccisano	7-21-2017	Waived	X	N/A	Observed	For use with

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e_mal_5.csv.txt	and Reiss					inhibition data for 150 mg/kg dose of malathion	Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_oxon_1.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 1.0 mg/kg dose of oxon	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_oxon_2.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 3.5 mg/kg dose of oxon	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_oxon_3.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 7.0 mg/kg dose of oxon	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_oxon_4.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 10 mg/kg dose of oxon	For use with Barnett_2008b.m, remove .txt
Barnett_2008b_singledos e_oxon_5.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data for 12.5 mg/kg dose of oxon	For use with Barnett_2008b.m, remove .txt
Fulcher_2006.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE inhibition resulting from single oral dose	For use with postnatal_rat.csl, change file extension to .m to run

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						(150 mg/kg) of malathion	
Fulcher_2006_PND11_si ngle_dose.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data	For use with Fulcher_2006.m, remove .txt
Huntington_2001_single_ dose_PNR.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE inhibition and plasma BuChE inhibition resulting from single oral doses of malathion	For use with postnatal_rat.csl, change file extension to .m to run
Huntington_2001_singled ose_1_PNR.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data resulting from 5 mg/kg dose of malathion	For use with Huntington_2001_singl e_dose_PNR.m, remove .txt
Huntington_2001_singled ose_2_PNR.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data resulting from 50 mg/kg dose of malathion	For use with Huntington_2001_singl e_dose_PNR.m, remove .txt
Huntington_2001_singled ose_3_PNR.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data resulting from 150 mg/kg dose of malathion	For use with Huntington_2001_singl e_dose_PNR.m, remove .txt
Huntington_2001_singled	Loccisano	7-21-2017	Waived	X	N/A	Observed	For use with

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ose_4_PNR.csv.txt	and Reiss					inhibition data resulting from 450 mg/kg dose of malathion	Huntington_2001_singl e_dose_PNR.m, remove .txt
Huntington_2001_repeat _dose_PNR.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates brain and RBC AChE inhibition and plasma BuChE inhibition resulting from 11 oral doses of malathion	For use with postnatal_rat.csl
Huntington_2001_dosing. xls.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Doses for malathion and oxon in ug/kg for 11 days in postnatal rats	For use with Huntington_2001_repe at_dose.m, remove .txt
Huntington_2001_repeat dose_1a.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data resulting from 5 mg/kg dose of malathion	For use with Huntington_2001_repe at_dose.m, remove .txt
Huntington_2001_repeat dose_2a.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data resulting from 50 mg/kg dose of malathion	For use with Huntington_2001_repe at_dose.m, remove .txt
Huntington_2001_repeat dose_3a.csv.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Observed inhibition data	For use with Huntington_2001_repe

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						resulting from 150 mg/kg dose of malathion	at_dose.m, remove .txt
human.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	acslX code for human life stage model	Change the file extension to .csl to run
human_parameters.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Human model parameters	For use with human.csl, change file extension to .m to run
acute_dose.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates RBC AChE inhibition resulting from single oral dose of malathion	For use with human.csl; dose amount is generic and can be adjusted, change file extension to .m to run
subchronic_dose.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates RBC AChE inhibition resulting from 21 days of oral dosing with malathion	For use with human.csl, change file extension to .m to run
multiple_test_2.xls.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Dose amount for 21 days	For use with subchronic_dose.m; dose amount is generic and can be adjusted in spreadsheet, remove .txt
inhalation.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates RBC AChE inhibition resulting from 21	For use with human.csl; dose amount is generic and can be adjusted,



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						days of inhalation exposure (8 hr/day, 5 day/week)	change file extension to .m to run
dermal.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates RBC AChE inhibition resulting from 21 days of dermal exposure (8 hr/day, 5 day/week)	For use with human.csl; dose amount is generic and can be adjusted, change file extension to .m to run
acute_oxon_dose.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates RBC AChE inhibition resulting from single oral dose of oxon	For use with human.csl; dose amount is generic and can be adjusted, change file extension to .m to run
subchronic_oxon_dose.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates RBC AChE inhibition resulting from 21 days of oral dosing with oxon	For use with human.csl, change file extension to .m to run
dermal_exposure_scenarios.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates EPA dermal exposure scenarios and resulting RBC AChE inhibition for adults and kids	For use with human.csl; exposure parameters can be adjusted within m file, change file extension to .m to run
inhalation_exposure_scen	Loccisano	7-21-2017	Waived	X	N/A	Simulates EPA	For use with human.csl;

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arios.txt	and Reiss					inhalation exposure scenarios and resulting RBC AChE inhibition for adults and kids	exposure parameters can be adjusted within m file, change file extension to .m to run
oral_exposure_subchroni c.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates EPA oral exposure scenario (21 days) and resulting RBC AChE inhibition for adults	For use with human.csl, change file extension to .m to run
daily_oral_dose.xls.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Oral doses for 21 days	For use with oral_exposure_subchro nic.m; dose amount is generic and can be adjusted, remove .txt
oral_exposure_child.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates EPA oral exposure scenario (21 days) and resulting RBC AChE inhibition for kids	For use with human.csl, change file extension to .m to run
drinking_water.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Simulates EPA drinking water scenario for oxon	For use with human.csl, change file extension to .m to run

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						and resulting RBC AChE inhibition	
drinking_water.xls.txt	Loccisano and Reiss	7-21-2017	Waived	X	N/A	Doses for oxon in drinking water	For use with drinking_water_oxon.m ; dose amount is generic and can be adjusted, remove .txt

\*If applicable