short name	name of the model / tool	exposure target	route of exposure	sources of exposure	product class / chemicals / substances	tier / complexity	strengths	limitations	evaluation status	source / reference / download	platform	availability	level of maintenance	owner/ developer	language	model input	model structure	model output	tool	model	remarks on model / tool	version available	last update	edited by
BEEHAVE	BEEHAVE	Bees	Feed	pollen, nectar	pesticides					https://beehave-model.net/		free		Research team	english									NvG
ECETOC TRA	see sheet "Worker"	Environment (also modules for worker and consumers available)	inhalation, dermal, oral		liquid and solid chemicals																			
EUSES	see sheet "general population"																							
EXAMS	Exposure Analysis Modeling System (EXAMS)	Aquatic species	aquatic ecosystem models and rapidly evaluating the fate, transport, and exposure concentrations, water		Environmental pollutants		EXAMS contains an integrated Database Management System (DBMS) specifically designed for storage and management of project databases required by the software. User interaction is provided by a full featured Command Line Interface (CLI), context-sensitive help menus, an on-line data dictionary and			https://www.epa.gov/exposure-assessment-models/exams-version-index			active	United States Environmental Protection Agency (EPA)	english								
GREAT-ER 4.0	Geo-referenced Regional environmental Exposure Assessment Tool for European Rivers (GREAT-ER) 4.0	Aquatic species	river, water		"down-the-drain" chemicals					http://cefic-lri.org/toolbox/great-er/	GREAT-ER 4.0 running under MS Windows as Add-In of ArcGIS Desktop 10 (ESRI®)		complete	Kehrein et al., 2015	english	quantitative values	system of differential equations	quantitative values	yes			4		NvG
iSTREEM model	iSTREEM model	Aquatic species	effluent, receiving waters		"down-the-drain" chemicals					https://www.cleaninginstitute.org/industry-priorities/science/istreem			complete	The American Cleaning Institute (ACI)	english								NvG

OECD Pov and LRTP Screening Tool	OECD overall persistence (Pov) and long-range transport potential (LRTP) Screening Tool	Environment	multimedia chemical fate models		organic chemicals	screening	The Tool software allows a simple sensitivity and uncertainty analysis of results for the single chemical; Monte Carlo Analysis for Single Chemical			http://www.oecd.org/env/ehs/risk-assessment/oecdpovandlrtpscreeningtool.htm	The Tool is a Microsoft Excel file with included Visual Basic code. The program code and input and output data are integrated with the spreadsheet functions of Excel.		complete		english								
Pangea	Pangea	aquatic and terrestrial species	multimedia chemical fate model, and dissolved chmical fraction in exposure environments	industrial releases, agricultural applications	organic chemicals	screening level, quantitative, geospatialized analysis	global applicability; can be adapted to any spatial region and resolution; only model for chemical pollution that provides a flexible spatial grid resolution with global coverage	maximum resolution is limited to scales for which 2nd order processes can be neglected	Spatial model output evaluated in case studies against measured environmental concentrations; Underlying processes based on USEtox, and with that evaluated via several in-depth model comparisons between 2002-2008	http://www.pangea-model.org	Matlab (math engine), ArcGIS (geospatialization engine), Python (processing engine)	only accessible by model owners	active	Technical University of Denmark (DTU)	english	Quantitative values	Differential equations based on physical-chemical laws, structured in matrices (e.g. for rate constants) and vectors (e.g. emission sources)	Quantitative values	yes	yes	Enviornmental and exposure processes entirely based on UNEP-SETAC global consensus model USEtox	2.0	10/19	
RAIDAR	see "General population (human)"														english								
TERRACE	TERRACE, Terrestrial Runoff Modelling for Risk Assessment of Chemical Exposure	Environment	waters entering river systems		Environmental pollutants					http://cefic-lri.org/toolbox/terrace/			Complete - The TERRACE database is no longer compatible with current operating systems.	by CEFIC LRI in collaboration with Cranfield University and University of Durham	english								

USEtox	The UNEP-SETAC scientific consensus model for characterizing human and ecotoxicological impacts of chemical emissions in life cycle assessment	aquatic and terrestrial species	multimedia chemical fate model, and dissolved chmical fraction in exposure environments	global applicability; parameterized for situations where emission locations are unknown, and parameterized (sub-)continental regions	organic chemicals and metal ions, industrial releases, agricultural emissions	screening level	steady-state and dynamic version available	global parameterization model with limited applicability to local situations	Evaluated via several in-depth model comparisons between 2002 and 2008	https://usetox.org	Excel spreadsheet and Matlab version (for internal use)	free	active	USEtox International Centre hosted at the Technical University of Denmark (DTU)	english	Reference model in life cycle impact assessment and environmental footprinting	Differential equations based on physical-chemical laws, structured in matrices (e.g. for rate constants)	impact characterization factors including fate, exposure, and effect factors	yes	yes	Endorsed by UNEP-SETAC Life Cycle Initiative for use in LCA and comparative risk screening; recommended by EU (ILCD) and US-EPA (TRACI)	v2.12, v3beta	03/22	