**Quick Start Guide for SHEDS-HT**

This tutorial will guide you through 1) Installing the SHEDS-HT R Package and corresponding data and 2) running an example run included in the R package (a run of chemicals identified via MSDS sheets as present in various categories of consumer products). This tutorial assumes that you have already installed both R and RStudio. Most of these steps will only need to be done once. Also included with the SHEDS-HT distribution package is a script titled that, with editing for paths, will perform the steps in this tutorial.

**Note: If when running “setup()” (in Step 2 below) you receive an error cannot open file 'R/Sheds\_HT.R': No such file or directory" you have a old version of SHEDS-HT functions loaded in your workspace. From the RStudio menu select” Session->Clear Workspace” and try again**

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| 1. Create a SHEDS home location for storing your input and output files; create “**inputs**” and “**output**” subfolders. You can create as many SHEDS-HT home folders as you want, accessing them at different times. Here, for example, we create a folder called “C:/SHEDSFORTESTING” |  |
| 1. Install SHEDS-HT package into your R environment. You will only need to do this once for each computer, or when you are installing an updated version of the R package. | Type the following command into the RStudio command line, giving the path to the SHEDS-HT package file.  >install.packages("F:/ShedsHT\_0.1.4.tar.gz", repos = NULL, type = "source")  OR  in RStudio, select “Tools”; “Install Packages”; and “Install from: Package Archive File” and browse to the file location. |
| 3. Load other R packages required by SHEDS-HT (**data.table**, **stringr**, **plyr**, and **ggplot**). You will only need to do this once for each computer. | Type the following commands into the RStudio command line  >install.packages("data.table”)  >install.packages("stringr”)  >install.packages("plyr”)  >install.packages("ggplot2”)  OR  in RStudio, select “Tools”; “Install Packages”; and “Install from: Repository” and type in a package name. Repeat for all 4 packages. |
| 1. Load the ShedsHT Package functions into the current session. (This must be done every time you start a new R session.) | Type the following command into the RStudio command line:  > library(ShedsHT) |
| 1. Run the “**setup**” function on the SHEDS home location folder that you created in step 1, so SHEDS knows where to store materials. (This must be done every time you start a new R session.) | Type the following command into the RStudio command line:  > setup(“C:/SHEDSFORTESTING”)  The version information and EPA Disclaimer will display.  ShedsHT Version 0.1.5 (03/10/2017)  Disclaimer  The United States Environmental Protection Agency through its Office of Research and Development funded and collaborated in the research and development of this software, in part under Contract EP-C-14-001 to ICF International. The model is publicly available in Beta version form. All input data used for a given application should be reviewed by the researcher so that the model results are based on appropriate data sources for the given application. This model, default input files, and R package are under continued development and testing. The model equations and approach are published in the peer-reviewed literature (Isaacs et al. Environ. Sci. Technol. 2014, 48, 12750-12759). The data included herein do not represent and should not be construed to represent any Agency determination or policy. |
| 1. If this is the first time you are using SHEDS, or if you have created a new home location, copy the SHEDS default inputs into the file. They are available at the SHEDS Github repository here:   **https://github.com/HumanExposure/SHEDSHTRPackage** | Copy files into the “inputs” folder of your SHEDS home location |
| 1. Call the SHEDS run function with a SHEDS **Run file** as argument. SHEDS comes with several example run files described in the Technical Manual. They are located in the **input** directory of your SHEDS home location. Here, we run the “**artsandcrafts**” example. | >run(“run\_artsandcrafts.txt”)  This will produce the output:  run.name = run\_artsandcrafts  n.persons = 100  person.output = 1  source.output = 1  min.age = 0  max.age = 99  genders = M F  season = P S F W  details = 1  age.match.pct = 20  run.seed = 876144637  set.size = 10000  act.diary.file = Activity\_diaries.csv  chem.props.file = Chem\_props.csv  diet.diary.file = Diet\_diaries.csv  exp.factor.file = Exp\_factors.csv  fugacity.file = Fugacity.csv  media.file = Media.csv  physiology.file = Physiology.csv  population.file = Population.csv  source.vars.file = Source\_vars\_products.csv  source.scen.file = Source\_scen\_products.csv  source.chem.file = source\_chem\_ac.csv  # chemicals = 0  Reading Activity Diaries completed  Reading Chemical Properties completed  Reading Dietary Diaries completed  Reading Exposure Factors completed  Reading Media File completed  Reading Physiology File completed  Reading Population File completed  Reading Source.chemicals file completed  Reading Source.variables file completed  Activity Diary Pooling completed  Dietary Diary Pooling completed  General Factor Tables completed  Media-specific Factor Tables completed  Starting source 1 of chem 1 of 24  set= 1 / 1 chem= 1 / 24 100\_41\_4 ETHYLBENZENE |
| 1. Examine the SHEDS Output files in the Output folder of the SHEDS home folder you designated with **setup**(). The files will be in a subfolder under “Output” with the run name you provided in the run file (Here   “artsandcrafts”). |  |
| 1. Combine the Percentile Data for all chemicals (i.e. the “AllStats” files created in the output folder) into a single file for other analyses. The file is placed in the output folder for the run. | combine\_output(run.name="artsandcrafts", out.file="artsandcrafts.csv")  Processing chemical 1 of 24  Processing chemical 2 of 24  Processing chemical 3 of 24  Processing chemical 4 of 24  Processing chemical 5 of 24  Processing chemical 6 of 24  Processing chemical 7 of 24  Processing chemical 8 of 24  Processing chemical 9 of 24… |