What's New (November 2013)

pdf version

The What's New section keeps users informed of changes to: toxicity values, exposure parameters, chemical-specific parameters, equation formats and any other SL changes. Please check this site frequently to be advised of any recent changes.

November, 2013

- New Tables were generated that reflect changes in the toxicity and chemical-specific parameters as per the RSL hierarchies. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current. This spreadsheet file (or this pdf file) is a comparison of the previous summary table to the current for TR=1E-06 and THQ=1.0. This spreadsheet file (or this pdf file) is a comparison of the previous summary table to the current for TR=1E-06 and THQ=0.1.

Changes are the following:

1. Chemicals with new toxicity values due to PPRTV updates are:
    - dinitrotoluene, technical grade,
    - nonane, n-,
    - ethyl acetate,
    - tert-amyl-alcohol,
    - ethoxyethanol, 2-,
    - dimethoxybenzidine, 3,3'-,
    - butylated hydroxytoluene,
    - nitromethane
    - dibenzothiophene
    - dichlorobenzotrifluoride, 3,4- (subchronic only)
    - trinitrophenylmethylnitramine (Tertyl) and
    - endosulfan sulfate (subchronic only).
2. Chemicals with new toxicity values due to IRIS updates are:
    - Methanol
    - Biphenyl and
    - 1,4-Dioxane.
3. Chemicals with new toxicity values due to Cal EPA updates are:
    - Butadine, 1,3- and
    - Caprolactam.

- The calculator page now has an option for the user to enter site concentrations and calculate risk based on the RSL target risk and the RSL concentration. This is a simple calculation where the risk based on the entered media concentration is equal to the RSL target risk multiplied by the user concentration is then divided by the RSL concentration.

RISK=(RSL_TR x User_C)/RSL_C or
HQ=(RSL_THQ x User_C)/RSL_C

The RSL and risk results are presented in the output and available for download. No daily intakes are calculated.

Whether this calculation will suit the needs of a given project depends upon site-specific decisions, the conceptual site model, the purpose of the risk assessment and the authority under which it is being conducted, etc. Please consult your regional risk assessor for further guidance in site-specific situations.

- The calculator offers the user to populate the pick list based on CAS number search as well as chemical name.
- The total petroleum hydrocarbons, previously added to the calculator, have been added to the RSL tables. For the low aliphatic fraction, n-hexane was selected as the representative compound for the toxicity values as well as the chemical-specific parameters. For the medium aliphatic fraction, hydrocarbon streams was selected as the representative compound for the toxicity values and n-nonane was selected to represent the chemical-specific parameters. For the high aliphatic fraction, white mineral oil was selected as the representative compound for the toxicity values as well as the chemical-specific parameters. For the low aromatic fraction, benzene was selected as the representative compound for the toxicity values as well as the chemical-specific parameters. For the medium aromatic fraction, 2-methylnaphthalene was selected as the representative compound for the RfD and naphthalene was selected for the RfC. An average of the chemical-specific parameters for 2-methylnaphthalene and naphthalene was calculated. For the high aromatic fraction, fluoranthene was selected as the representative compound for the toxicity values as well as the chemical-specific parameters.
- A new construction worker landuse was added to the calculator only. The construction landuse is described in the supplemental soil screening guidance. This landuse is limited to an exposure duration of 1 year and is thus, subchronic. Other unique aspects of this scenario are that the PEF is based on mechanical disturbance of the soil and a special VF equation is used. In general, the intakes and contact rates are all greater than the outdoor worker. Exhibit 5-1 presents the exposure parameters.
- For the residential landuse, adult and child noncancer results for soil, tapwater and soil to groundwater exposure are now provided in calculator output. This gives the user the ability to calculate RSLs for scenarios where only adults are exposed such as prisons, military bases and retirement communities.
- The phthalates are now added to their own chemical group and will all appear together in the table like the dioxins and cyanides, etc. do. FAQ 9 is updated accordingly
- "ethyl chloride" is now listed as "ethyl chloride (chloroethane)".
- FAQs were added to explain:

    - why IRIS air concentrations and drinking water unit risk values differ from the RSLs,
    - the process of printing the color tables in black and white,
    - how the various EPA regions use the screening tables with different THQs,
    - the Chlordane CAS number selection,
    - how to apply the tapwater RSLs to dissolved vs total data and
    - how the TCDD (Dioxin) oral slope factor was chosen.

- FAQs 9 and 34 were updated.

June, 2013

- The THQ = 0.1 Tables were corrected for TCE residential land use screening values found in the Summary Table, Soil to Groundwater supporting Table and the Composite Table.

- If you are unclear about which set of tables (THQ=1.0 or THQ=0.1) to use at your site, contact your EPA regional risk assessment website. The rationale for using THQ of 0.1 for screening is that if 10 chemicals were at a site and all narrowly passed a screening at THQ=1.0, the resulting total HI could actually be 10.

May, 2013

- New Tables were generated that reflect changes in the toxicity and chemical-specific parameters as per the RSL hierarchies. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current.

All tables are presented with target cancer risk (TR) of 1E-06, however, tables are presented with target hazard quotients (THQ) of 1.0 and 0.1. Use the tables appropriate for your region.

Changes are the following:

1. Chemicals with new toxicity values due to PPRTV updates are:

    - Toluene-2,5-diamine,
    - Butylbenzene, tert-,
    - Octyl Phthalate, di-N-,
    - Butylbenzene, sec-,
    - Thiocyanic Acid,
    - Dinitrotoluene, 2,6-,
    - Methyl-1,4-benzenediamine dihydrochloride, 2-,
    - Methylbenzene-1,4-diamine sulfate, 2-,
    - Benzenediamine-2-methyl sulfate, 1,4-,
    - Zirconium and
    - Dinitrotoluene, Technical grade.
2. Chemicals with new toxicity values due to ATSDR updates are:
    - Uranium (Soluble Salts),
    - 1,4-Dioxane,
    - Tricresyl Phosphate (TCP),
    - Cadmium,
    - Vanadium and Compounds and
    - Tris(1,3-Dichloro-2-propyl) Phosphate.
3. Chemicals with new toxicity values due to Cal EPA updates are:
    - Nickel Refinery Dust,
    - Nickel Carbonyl,
    - Nickel Oxide and
    - Nickel Subsulfide.

- New Tables are now provided with target hazard quotients (THQ) of 1.0 and 0.1. Use the tables appropriate for your region.
- The RfDs for the numbered, dioxin-like PCBs are now based on the TCDD (Dioxin) RfD from IRIS and the TEFs presented in User Guide.
- The high aliphatic and high aromatic TPHs were classified as SVOCs and all the TPHs were given chemical-specific parameters. Chemical-specific parameter assignment was based representative compound identified in the PPRTV paper when available. The medium aliphatic TPH did not have a surrogate listed in the PPRTV paper so n-nonane was assigned. The TPHs are currently available in the calculator only.
- Glyphosate Koc was updated.
- Thiocyanic Acid was given the CAS number 463-56-9. This number was previously assigned to Thiocyanate.
- Vanadium and Compounds was given the CAS number 7440-62-2. Previously it did not have a CAS number. This results in the database matching a RfC from ATSDR.
- The calculator, if operated in site-specific mode, now gives the option to substitute the Csat for the inhalation route screening level as well as giving the opportunity to substitute the theoretical concentration limit of 1E+05 mg/kg for the total screening level. These two options, combined with the ability change the target risk and the target hazard quotient should provide users with enough flexibility to generate screening levels applicable to many site-specific situations.
- Arsenic screening levels for ingestion of soil are now calculated with the relative bioavailability factor (RBA) of 0.6. The RBA can be adjusted using the calculator in site-specific/user-provided mode the same way toxicity values can be changed. The RBA for soil ingestion is shown in the calculator output. See Section 5.10 of the User Guide for more information.

January, 2013

In the November 2012 Update, the third to the last bullet that identifies the updates to the recreator landuse scenario, the following additional information may be useful.

> The calculator-based recreator landuse scenario shares the following identical default exposure parameters with the residential landuse scenario: body surface area, ingestion rates, body weight and soil adherence factors. Default recreational exposure parameters are not provided for exposure frequency, exposure time

and events per day because recreational activities vary greatly and should be derived on a site-specific basis. Please see the User's Guide for the exposure equations and a conceptual model of quantified pathways.

November, 2012

- New Tables were generated that reflect changes in the toxicity and chemical-specific parameters as per the RSL hierarchies. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current. Changes are the following:
    1. The hydrogen cyanide RfC was also assigned to cyanide. Further, the cyanide Kd was also assigned to hydrogen cyanide. This will allow for calculation of a Csat and protection of groundwater SSLs.
    2. Chemicals with new toxicity values due to PPRTV updates are:
        - acetone cyanohydrin,
        - boron trichloride
        - chloroethanol, 2-,
        - cyclohexene,
        - diethanolamine,
        - ethylene cyanohydrin,
        - methacrylonitrile,
        - methyl acrylate,
        - octyl phthalate, di-N-,
        - thallium acetate,
        - thallium carbonate,
        - thallium chloride,
        - thallium (I) nitrate,
        - thallium sulfate,
        - thiocyanate,
        - toluene-2,5-diamine,
        - toluidine, p-,
        - triacetin,
        - tris(1-chloro-2-propyl)phosphate and
        - zirconium.
    3. The RfC for mercuric chloride was replaced with the IRIS RfC for elemental mercury.
- Changes in chemical-specific parameters were also made. The most significant change was updating the hierarchy of sources for water solubility as it was discovered that some sources were more qualitative than assumed. This spreadsheet file (or this pdf file) is a comparison of the previous database to the current for parameters not associated with the dermal to tapwater route.
- Thiocyanate was reclassified as an inorganic compound to be equivalent to all the other cyanide compounds.
- Changes were also made to the parameters involved in dermal exposure to water. Our previous hierarchy used RAGS Part E before using EPI for EPD (effective predictive domain) determination and Kp (dermal permeability) values. Recently released logKows (logp) for some chemicals conflicted with those in RAGS Part E. Specifically for the RSL project, the most recent logKow were used to determine EPD status. To complete the transition the RSLs now also calculate our own FA (fraction absorbed) values. This spreadsheet file (or this pdf file) is a comparison of the previous database to the current for parameters associated with the dermal to tapwater route.
- To calculate a Csat, the ambient state of the VOC in soil must be known. As indicated in the SSL Guidance, Csat is not calculated for a chemical that is solid at soil temperatures. To make sure this rule was being followed, the melting point database was updated and this rule was established from the SSL guidance: if melting point is less than 20 &degC, chemical is a liquid; if melting point is above 20 &degC, chemical is solid.
- The FAQ has been updated in response to user questions.
- The individual TPHs (total petroleum hydrocarbons) are now available in the RSL calculator.
- MCLs were added for the following:
    - aldicarb,

    - aldicarb sulfone and
    - aldicarb sulfoxide.
- The recreator scenario includes additional default exposure parameters that are the same as exposure parameters for the residential scenario.
- The RSL calculator was updated for the residential scenario site-specific option. The RSL calculator requires separate entries for each age cohort.
- The RSL calculator output for the "Soil to Groundwater" scenario has been updated to include the SSLs for both cancer and noncancer rather than just the most protective value. The recommended SSL will still be presented. This change is because many chemicals have significant noncancer effects in addition to their cancer risk and should be considered.

May, 2012

- New Tables generated that reflect changes from all the toxicity and chemical-specific parameter sources used in the hierarchies. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current. Changes are:
    1. Uranium (Soluble Salts) lost its ATSDR RfC because it was DRAFT.
    2. Cyanides, Sodium Cyanide, Potassium Cyanide, Potassium Silver Cyanide, Calcium Cyanide have new IRIS RfDs.
    3. Cresol, p-chloro-m- and Cresol, -p now have the ATSDR RfD for Cresols.
    4. Eleven chemicals had their VOC status changed due to updates in Henry's Law constants. Chemicals that were once classified as SVOCS and are now VOCs are: Dihydrosafrole, 2-Chloroacetaldehyde, Propylene, Ethyleneimine, 1,4-Dithiane, Methyl Isocyanate, Mineral Oils and Dimethylvinylchloride. Chemicals that were once VOCs and are now SVOCs are:Isobutyl Alcohol, Cresols and Propylene Glycol Dinitrate.
    5. Tetrahydrofuran (IRIS), Hexamethylphosphoramide (PPRTV) and Sulfalone (PPRTV) are new chemicals.
    6. Tetrachloroethylene, Methylene Chloride and TCDD have new IRIS values.
    7. Methylene Chloride is now classified as a mutagen.
    8. ABS values were assigned for 1 and 2-Methylnaphthalene.
    9. The EPD status for Chlordane was changed.
- The Recreator landuse was updated to include output for adult as well as child for noncancer. The Equations Page and User's Guide have been updated to reflect this addition.
- The inputs into the PEF and VF are now included in the calculator output.
- The NAAQS value for lead was added to Resident Air.
- The User's Guide has been updated.
- The FAQ has been updated in response to user questions.

November, 2011

- New Tables generated that reflect changes from all the toxicity sources used in the toxicity hierarchy. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current. Changes are:
    1. Hexachloroethane has a new RFD and SFO from IRIS. IRIS dropped the IUR.
    2. Trichloroacetic Acid is a new chemical with IRIS RFDOC and SFO.
    3. TCE has new IRIS RfD, RfC, SFO and IUR. TCE is now classified as a mutagen. See the new FAQ.
    4. Chlorpyrifos has the IRIS RFDOC dropped.
    5. Vanadium Sulfate RfD was dropped from HEAST.
    6. Acrylamide is now treated as a mutagen.
- TCE has a new IRIS assessment and the RSLs reflect the new toxicity values presented. For land uses that include children's exposure, special calculations are required. Users will be required to run the calculator in site-specific/user-provided mode to generate accurate TCE RSLs. See the new FAQ.
- This release introduces dermal exposure to tapwater equations following RAGS Part E.
- This release switches from the adult to the child for noncancer tapwater RSL equations. Soil and Tapwater now follow the same protocol of using the child as the noncancer receptor.
- Change RSL, PPRTV and HEAST contact information from Dave Crawford/Rich Kapuscinski to Michele

Burgess.

- The User's Guide has been updated.
- The FAQ has been updated in response to user questions.
- The Equations Page has been updated to present new tapwater equations. Changes include addressing dermal exposures when we have the data from RAGS Part E, and basing the noncancer tapwater RSLs upon children's exposures.

June, 2011

New Tables generated that:

- Remove the inhalation unit risk value for the analyte "lead and compounds" (which will delete the residential and industrial air SLs that were inadvertently calculated for this analyte).
- Update soil to groundwater screening levels for the following mutagens: Benzidine, Chromium(VI), Acrylamide, Trichloropropane, 1,2,3-, Nitrosodimethylamine, N-, Methylene-bis(2-chloroaniline), 4,4'-, Nitrosodiethylamine, N-, Benz[a]anthracene, Benzo[a]pyrene, Benzo[b]fluoranthene, Benzo[k]fluoranthene, Chrysene, Dibenz[a,h]anthracene and Indeno[1,2,3-cd]pyrene.
- Added GIABS and ABS values to newly added analytes.
- Updated the status of those contaminants determined by EPA to be carcinogenic by a mutagenic mode of action for Acrylamide, Anthraquinone, 9,10-, Benzenediamine-2-methyl sulfate, 1,4-, Methyl-1,4-benzenediamine dihydrochloride, 2-, Methylbenzene,1-4-diamine, monohydrochloride, 2-, Methylbenzene-1,4-diamine sulfate, 2-, Phenothiazine, Trimethylbenzene, 1,2,3-, Dimethylbenz(a)anthracene, 7,12-, Nitroso-N-ethylurea, N-, Methylcholanthrene, 3-, Nitroso-N-methylurea, N-, Safrole and Urethane to reflect the list of contaminants presented in the EPA Office of Solid Waste and Emergency Responses's Handbook for Implementing the Supplemental Cancer Guidance at Waste and Cleanup Sites described in Section 5.15 of the RSLs' User's Guide.

May, 2011

- New Tables generated that reflect changes from all the toxicity sources used in the toxicity hierarchy. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current.
- Subchronic toxicity values are now available for assessment of less than chronic scenarios. This option is only available in the calculator. None of the RSLs in the download tables are calculated with subchronic toxicity values because all of those scenarios are assumed to be chronic for screening purposes. Scenarios less than seven years exposure duration may or may not be judged as chronic in the risk assessment. Consult your regional risk assessor for further guidance on this matter.
- A recreational scenario is now available in the RSL calculator. Surface water and sediment/soil can be evaluated. The EPA provides very few default exposure parameters so users are encouraged to have a strong understanding of their receptor prior to use and are required to use the "site-specific" option. The landuse equations are presented in the User Guide and the Equations page. The recreational scenario assess dermal exposure to water following RAGS Part E guidance. This feature required many new supporting equations to be developed.
- The User's Guide has been updated.
- FAQs 9, 16, 18, 33, 36 and 38 have been updated in response to user questions.
- All the perchlorates are grouped together in the tables.
- All the phosphates are grouped together in the tables.
- The database of the RSL sources for chemical-specific parameters was updated. EPI, CRC, Perry's, Lange's and Yaw's were updated.

February, 2011

- The restriction on acess to the PPRTV website has been lifted. PPRTVs can be accessed from links in section 2.3 of the user guide and FAQ#27.

November 11, 2010

- New Tables generated that reflect changes from all the toxicity sources used in the toxicity hierarchy. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current.
- The User's Guide has been updated.
- The FAQ has been updated in response to user questions. The FAQ has also been reorganized into 5 topics to facilitate searching.
- TEFs have been applied to noncarcinogenic toxicity values for the dioxin like PCBs.
- "Mercuric Sulfide" and "Mercury, Inorganic Salts" were removed from the table and "Mercuric Chloride" was renamed "Mercuric Chloride (and other Mercury salts)".
- "Manganese water" was renamed "Manganese non-diet".

May 17, 2010

- New Tables generated that reflect changes from all the toxicity sources used in the toxicity hierarchy. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current.
- The User's Guide has been updated.
- The FAQ has been updated in response to user questions.
- The contaminant names and CAS numbers have been moved to the center of the tables. This change was implemented so that the contaminant name would nearly always be visible on your screen.

December 7, 2009

- New Tables generated that reflect changes from all the toxicity sources used in the toxicity hierarchy. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current.
- The User's Guide has been updated.
    - A new source of toxicity values used was added: screening toxicity values in an appendix to certain PPRTV assessments. While we have less confidence in a screening toxicity value than in a PPRTV, we put these ahead of HEAST toxicity values because these appendix screening toxicity values are more recent and use current EPA methodologies in the derivation, and because the PPRTV appendix screening toxicity values also receive external peer review.
- The FAQ has been updated in response to user questions.
- The database of chemical-specific parameters was updated. In particular, EPI had significant improvements to its Koc program. Changes in Koc effect calculations of the Volatilization Factor, Soil Screening Levels and Soil Saturation Concentrations.

April 15, 2009

- New Tables generated that reflect changes from all the toxicity sources used in the toxicity hierarchy. This spreadsheet file (or this pdf file) is a comparison of the previous toxicity database to the current.
- The User's Guide has been updated.
    - The generic tables no longer provide individual SLs for dioxin-like congeners. The User's Guide provides instructions on how to apply the TEFs.
    - RAGS Part F guidance has been incorporated into the FAQ and User's Guide.
    - The OSWER Cancer Handbook guidelines have been incorporated into a new section in the user guide addressing mutagens (Section 5.14).
    - A detailed discussion of the sources of Kd values has been added to Section 4.9 of the User's Guide.
    - Section 5.12 was added to the User's Guide to address potential methods of screening sites with multiple contaminants.
- The FAQ has been updated in response to user questions.

October 16, 2008: Summary of Changes Posted

Spreadsheet of changes (XLS)

- Notes about the Spreedsheet of changes
  1) purple row = chemical no longer in table due to no values
  2) green row = chemical added
  3) yellow boxes = differences
- For the yellow differences, prior (June) value is on top and current (September) value is below. Letter differences are due to change in tox source and possible tox value. Note the "C" iur values which were in wrong units from CALEPA but are correct now.
- Most metals differ in soil to groundwater calculations. All PCBs/Dioxins that have "W" have been modified with newer TEF."

September 12, 2008

- New Tables generated that reflect the addition of several PPRTVs. Beta designation is removed.

July 7, 2008

- New Tables generated that reflect the addition of the Cal EPA IUR for Naphthalene.

July 3, 2008

- New Tables generated that reflect the correction of the IUR for Ethylene oxide.

July 2, 2008

- New Tables generated that reflect the removal of the CalEPA RfC for Trichloroethylene (TCE). After careful consideration, it was determined that the resulting noncancer screening level may not be protective of non-carcinogenic effects.

June 20, 2008

- New Tables generated that corrected the usage of the "nc" and "ca**" designation in the Summary Table for Tapwater.

June 17, 2008

- New Tables generated that corrected the usage of the "ca**" designation in the Summary Table.

June 13, 2008

- Some duplicate rows were removed from the residential tapwater supporting table.

May 2008

- Website open as a Beta release.
- The lead action level presented in the Generic Tables was changed from 0.015 to 15 ug/L.
- The copper action level presented in the Generic Tables was changed from 1.3 to 1300 ug/L.
- The labels for adult and child body weight in the Calculator output were corrected.
- The target risk labels in the Resident Air Supporting Table were corrected.
- The Inhalation Unit Risk for TCDD was changed to 38 and the Generic Tables were updated.