



```
#
# Package = MayaChemTools 7.4
# Release Date = Oct 21, 2010
#
# TimeStamp = Fri Mar 11 15:17:20 2011
#
# FingerprintsStringType = FingerprintsVector
#
# Description = TopologicalAtomTorsions:AtomicInvariantsAtomTypes
# VectorStringFormat = IDsAndValuesString
# VectorValueType = NumericalValues
#
Cmpd1 33;C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-C.X3.B04...;2 2 1 1 2 2 ...
Cmpd2 23;C.X1.B01.H3-C.X2.B02.H2-C.X3.B03.H1-C.X2.B02.H2...;2 2 1 5 ...
... ..
... ..
```

Example of CSV *Text* file containing topological atom torsions fingerprints string data:

```
"CompoundID", "TopologicalAtomTorsionsFingerprints"
"Cmpd1", "FingerprintsVector;TopologicalAtomTorsions:AtomicInvariantsAtomTypes;33;NumericalValues;IDsAndValuesString;C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-C.X3.B04 C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-N.X3.B03 C.X2.B02.H2-C.X2.B02.H2-C.X3.B03.H1-C.X2.B02.H2 C.X2.B02.H2-C.X2.B02.H2-C.X3.B03...;
2 2 1 1 2 2 1 1 3 4 4 8 4 2 2 6 2 2 1 2 1 1 2 1 1 2 6 2 4 2 1 3 1
... ..
... ..
```

The current release of MayaChemTools generates the following types of topological atom torsions fingerprints vector strings:

```
FingerprintsVector;TopologicalAtomTorsions:AtomicInvariantsAtomTypes;3
3;NumericalValues;IDsAndValuesString;C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-
C.X3.B04 C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-N.X3.B03 C.X2.B02.H2-C.X2.B0
2.H2-C.X3.B03.H1-C.X2.B02.H2 C.X2.B02.H2-C.X2.B02.H2-C.X3.B03.H1-O...;
;2 2 1 1 2 2 1 1 3 4 4 8 4 2 2 6 2 2 1 2 1 1 2 1 1 2 6 2 4 2 1 3 1
```

```
FingerprintsVector;TopologicalAtomTorsions:AtomicInvariantsAtomTypes;3
3;NumericalValues;IDsAndValuesPairsString;C.X1.B01.H3-C.X3.B03.H1-C.X3
.B04-C.X3.B04 2 C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-N.X3.B03 2 C.X2.B02.H
2-C.X2.B02.H2-C.X3.B03.H1-C.X2.B02.H2 1 C.X2.B02.H2-C.X2.B02.H2-C.X3.B
03.H1-O.X1.B01.H1 1 C.X2.B02.H2-C.X2.B02.H2-N.X3.B03-C.X3.B04 2 C.X2.B
02.H2-C.X3.B03.H1-C.X2.B02.H2-C.X3.B03.H1 2 C.X2.B02.H2-C.X3.B03.H1...
```

```
FingerprintsVector;TopologicalAtomTorsions:DREIDINGAtomTypes;27;Numeri
calValues;IDsAndValuesString;C_2-C_3-C_3-C_3 C_2-C_3-C_3-O_3 C_2-C_R-C
_R-C_3 C_2-C_R-C_R-C_R C_2-C_R-C_R-N_R C_2-N_3-C_R-C_R C_3-C_3-C_2-O_2
C_3-C_3-C_2-O_3 C_3-C_3-C_3-C_3 C_3-C_3-C_3-N_R C_3-C_3-C_3-O_3 C...;
1 1 1 2 1 2 1 1 3 1 3 2 2 2 1 1 1 3 1 2 2 32 2 2 5 3 1
```

```
FingerprintsVector;TopologicalAtomTorsions:EStateAtomTypes;36;Numerica
lValues;IDsAndValuesString;aaCH-aaCH-aaCH-aaCH aaCH-aaCH-aaCH-aasC aaC
H-aaCH-aasC-aaCH aaCH-aaCH-aasC-aasC aaCH-aaCH-aasC-sF aaCH-aaCH-aasC-
ssNH aaCH-aasC-aasC-aasC aaCH-aasC-aasC-aasN aaCH-aasC-ssNH-dssC a...;
4 4 8 4 2 2 6 2 2 2 4 3 2 1 3 3 2 2 2 1 2 1 1 1 2 1 1 1 1 1 1 2 1 1 2
```

```
FingerprintsVector;TopologicalAtomTorsions:FunctionalClassAtomTypes;26
;NumericalValues;IDsAndValuesString;Ar-Ar-Ar-Ar Ar-Ar-Ar-Ar.HBA Ar-Ar-
Ar-HBD Ar-Ar-Ar-Hal Ar-Ar-Ar-None Ar-Ar-Ar.HBA-Ar Ar-Ar-Ar.HBA-None Ar
-Ar-HBD-None Ar-Ar-None-HBA Ar-Ar-None-HBD Ar-Ar-None-None Ar-Ar.H...;
32 5 2 2 3 3 3 2 2 2 2 1 2 1 1 1 2 1 1 1 1 3 1 1 1 3
```

```
FingerprintsVector;TopologicalAtomTorsions:MMFF94AtomTypes;43;Numerica
lValues;IDsAndValuesString;C5A-C5B-C5B-C5A C5A-C5B-C5B-C=ON C5A-C5B-C5
B-CB C5A-C5B-C=ON-NC=O C5A-C5B-C=ON-O=CN C5A-C5B-CB-CB C5A-CB-CB-CB C5
A-N5-C5A-C5B C5A-N5-C5A-CB C5A-N5-C5A-CR C5A-N5-CR-CR C5B-C5A-CB-C...;
1 1 1 1 1 2 2 2 1 1 2 2 2 2 1 1 2 1 1 2 1 1 1 2 1 1 1 2 18 2 2 1 1
1 1 2 1 1 3 1 3
```

```
FingerprintsVector;TopologicalAtomTorsions:SLogPAtomTypes;49;Numerical
Values;IDsAndValuesPairsString;C1-C10-N11-C20 1 C1-C10-N11-C21 1 C1-C1
```

```
1-C21-C21 2 C1-C11-C21-N11 2 C1-CS-C1-C10 1 C1-CS-C1-C5 1 C1-CS-C1-CS
2 C10-C1-CS-O2 1 C10-N11-C20-C20 2 C10-N11-C21-C11 1 C10-N11-C21-C21 1
C11-C21-C21-C20 1 C11-C21-C21-C5 1 C11-C21-N11-C20 1 C14-C18-C18-C20
2 C18-C14-C18-C18 2 C18-C18-C14-F 2 C18-C18-C18-C18 4 C18-C18-C18-C...
```

```
FingerprintsVector;TopologicalAtomTorsions:SYBYLAtomTypes;26;NumericalVa
lues;IDsAndValuesPairsString;C.2-C.3-C.3-C.3 1 C.2-C.3-C.3-O.3 1 C.2
-C.ar-C.ar-C.3 1 C.2-C.ar-C.ar-C.ar 2 C.2-C.ar-C.ar-N.ar 1 C.2-N.am-C.
ar-C.ar 2 C.3-C.3-C.2-O.co2 2 C.3-C.3-C.3-C.3 3 C.3-C.3-C.3-N.ar 1 C.3
-C.3-C.3-O.3 3 C.3-C.3-C.ar-C.ar 2 C.3-C.3-C.ar-N.ar 2 C.3-C.3-N.ar-C.
ar 2 C.3-C.ar-C.ar-C.ar 1 C.3-C.ar-N.ar-C.3 1 C.3-C.ar-N.ar-C.ar 1 ...
```

```
FingerprintsVector;TopologicalAtomTorsions:TPSAAtomTypes;8;NumericalVa
lues;IDsAndValuesPairsString;N21-None-None-None 9 N7-None-None-None 4
None-N21-None-None 10 None-N7-None-None 3 None-N7-None-O3 1 None-None-
None-None 44 None-None-None-O3 3 None-None-None-O4 5
```

```
FingerprintsVector;TopologicalAtomTorsions:UFFAtomTypes;27;NumericalVa
lues;IDsAndValuesPairsString;C_2-C_3-C_3-C_3 1 C_2-C_3-C_3-O_3 1 C_2-C
_R-C_R-C_3 1 C_2-C_R-C_R-C_R 2 C_2-C_R-C_R-N_R 1 C_2-N_3-C_R-C_R 2 C_3
-C_3-C_2-O_2 1 C_3-C_3-C_2-O_3 1 C_3-C_3-C_3-C_3 3 C_3-C_3-C_3-N_R 1 C
_3-C_3-C_3-O_3 3 C_3-C_3-C_R-C_R 2 C_3-C_3-C_R-N_R 2 C_3-C_3-N_R-C_R 2
C_3-C_R-C_R-C_R 1 C_3-C_R-N_R-C_3 1 C_3-C_R-N_R-C_R 1 C_3-N_R-C_R-...
```

## OPTIONS

-a, --AtomIdentifierType *AtomicInvariantsAtomTypes* | *DREIDINGAtomTypes* | *EStateAtomTypes* | *FunctionalClassAtomTypes* | *MMFF94AtomTypes* | *SLogPAtomTypes* | *SYBYLAtomTypes* | *TPSAAtomTypes* | *UFFAtomTypes*

Specify atom identifier type to use for assignment of initial atom identifier to non-hydrogen atoms during calculation of topological atom torsions fingerprints. Possible values in the current release are: *AtomicInvariantsAtomTypes*, *DREIDINGAtomTypes*, *EStateAtomTypes*, *FunctionalClassAtomTypes*, *MMFF94AtomTypes*, *SLogPAtomTypes*, *SYBYLAtomTypes*, *TPSAAtomTypes*, *UFFAtomTypes*. Default value: *AtomicInvariantsAtomTypes*.

--AtomicInvariantsToUse "*AtomicInvariant,AtomicInvariant...*"

This value is used during *AtomicInvariantsAtomTypes* value of a, --AtomIdentifierType option. It's a list of comma separated valid atomic invariant atom types.

Possible values for atomic invariants are: *AS*, *X*, *BO*, *LBO*, *SB*, *DB*, *TB*, *H*, *Ar*, *RA*, *FC*, *MN*, *SM*. Default value: *AS,X,BO,H,FC*.

The atomic invariants abbreviations correspond to:

*AS* = Atom symbol corresponding to element symbol

*X*<n> = Number of non-hydrogen atom neighbors or heavy atoms

*BO*<n> = Sum of bond orders to non-hydrogen atom neighbors or heavy atoms

*LBO*<n> = Largest bond order of non-hydrogen atom neighbors or heavy atoms

*SB*<n> = Number of single bonds to non-hydrogen atom neighbors or heavy atoms

*DB*<n> = Number of double bonds to non-hydrogen atom neighbors or heavy atoms

*TB*<n> = Number of triple bonds to non-hydrogen atom neighbors or heavy atoms

*H*<n> = Number of implicit and explicit hydrogens for atom

*Ar* = Aromatic annotation indicating whether atom is aromatic

*RA* = Ring atom annotation indicating whether atom is a ring

*FC*<n/-n> = Formal charge assigned to atom

*MN*<n> = Mass number indicating isotope other than most abundant isotope

*SM*<n> = Spin multiplicity of atom. Possible values: 1 (singlet), 2 (doublet) or 3 (triplet)

Atom type generated by AtomTypes::AtomicInvariantsAtomTypes class corresponds to:

*AS.X*<n>.*BO*<n>.*LBO*<n>.<*SB*><n>.<*DB*><n>.<*TB*><n>.*H*<n>.*Ar*.*RA*.*FC*<n/-n>.*MN*<n>.*SM*<n>

Except for *AS* which is a required atomic invariant in atom types, all other atomic invariants are optional. Atom type specification doesn't include atomic invariants with zero or undefined values.

In addition to usage of abbreviations for specifying atomic invariants, the following descriptive words are also allowed:

*X* : NumOfNonHydrogenAtomNeighbors or NumOfHeavyAtomNeighbors

*BO* : SumOfBondOrdersToNonHydrogenAtoms or SumOfBondOrdersToHeavyAtoms

*LBO* : LargestBondOrderToNonHydrogenAtoms or LargestBondOrderToHeavyAtoms

*SB* : NumOfSingleBondsToNonHydrogenAtoms or NumOfSingleBondsToHeavyAtoms

*DB* : NumOfDoubleBondsToNonHydrogenAtoms or NumOfDoubleBondsToHeavyAtoms

*TB* : NumOfTripleBondsToNonHydrogenAtoms or NumOfTripleBondsToHeavyAtoms

*H* : NumOfImplicitAndExplicitHydrogens

*Ar* : Aromatic

*RA* : RingAtom

FC : FormalCharge  
 MN : MassNumber  
 SM : SpinMultiplicity

*AtomTypes::AtomicInvariantsAtomTypes* module is used to assign atomic invariant atom types.

--FunctionalClassesToUse "*FunctionalClass1,FunctionalClass2...*"

This value is used during *FunctionalClassAtomTypes* value of a, --AtomIdentifierType option. It's a list of comma separated valid functional classes.

Possible values for atom functional classes are: *Ar, CA, H, HBA, HBD, Hal, NI, PI, RA*. Default value [ Ref 24 ]:  
*HBD,HBA,PI,NI,Ar,Hal*.

The functional class abbreviations correspond to:

HBD: HydrogenBondDonor  
 HBA: HydrogenBondAcceptor  
 PI : PositivelyIonizable  
 NI : NegativelyIonizable  
 Ar : Aromatic  
 Hal : Halogen  
 H : Hydrophobic  
 RA : RingAtom  
 CA : ChainAtom

Functional class atom type specification for an atom corresponds to:

*Ar.CA.H.HBA.HBD.Hal.NI.PI.RA*

*AtomTypes::FunctionalClassAtomTypes* module is used to assign functional class atom types. It uses following definitions [ Ref 60-61, Ref 65-66 ]:

HydrogenBondDonor: NH, NH2, OH  
 HydrogenBondAcceptor: N[!H], O  
 PositivelyIonizable: +, NH2  
 NegativelyIonizable: -, C(=O)OH, S(=O)OH, P(=O)OH

--CompoundID *DataFieldName* or *LabelPrefixString*

This value is --CompoundIDMode specific and indicates how compound ID is generated.

For *DataField* value of --CompoundIDMode option, it corresponds to datafield label name whose value is used as compound ID; otherwise, it's a prefix string used for generating compound IDs like *LabelPrefixString<Number>*. Default value, *Cmpd*, generates compound IDs which look like *Cmpd<Number>*.

Examples for *DataField* value of --CompoundIDMode:

MolID  
 ExtReg

Examples for *LabelPrefix* or *MolNameOrLabelPrefix* value of --CompoundIDMode:

Compound

The value specified above generates compound IDs which correspond to *Compound<Number>* instead of default value of *Cmpd<Number>*.

--CompoundIDLabel *text*

Specify compound ID column label for CSV/TSV text file(s) used during *CompoundID* value of --DataFieldsMode option.  
 Default value: *CompoundID*.

--CompoundIDMode *DataField | MolName | LabelPrefix | MolNameOrLabelPrefix*

Specify how to generate compound IDs and write to FP or CSV/TSV text file(s) along with generated fingerprints for *FP | text | all* values of --output option: use a *SDFFile(s)* datafield value; use molname line from *SDFFile(s)*; generate a sequential ID with specific prefix; use combination of both *MolName* and *LabelPrefix* with usage of *LabelPrefix* values for empty molname lines.

Possible values: *DataField | MolName | LabelPrefix | MolNameOrLabelPrefix*. Default value: *LabelPrefix*.

For *MolNameAndLabelPrefix* value of --CompoundIDMode, molname line in *SDFFile(s)* takes precedence over sequential compound IDs generated using *LabelPrefix* and only empty molname values are replaced with sequential compound IDs.

This is only used for *CompoundID* value of --DataFieldsMode option.

--DataFields "*FieldLabel1,FieldLabel2,...*"

Comma delimited list of *SDFFile(s)* data fields to extract and write to CSV/TSV text file(s) along with generated fingerprints for *text | all* values of --output option.

This is only used for *Specify* value of --DataFieldsMode option.

Examples:

```
Extreg
MolID,CompoundName
```

**-d, --DataFieldsMode** *All | Common | Specify | CompoundID*

Specify how data fields in *SDFfile(s)* are transferred to output CSV/TSV text file(s) along with generated fingerprints for *text | all* values of *--output* option: transfer all SD data field; transfer SD data files common to all compounds; extract specified data fields; generate a compound ID using molname line, a compound prefix, or a combination of both. Possible values: *All | Common | specify | CompoundID*. Default value: *CompoundID*.

**-f, --Filter** *Yes | No*

Specify whether to check and filter compound data in *SDFfile(s)*. Possible values: *Yes or No*. Default value: *Yes*.

By default, compound data is checked before calculating fingerprints and compounds containing atom data corresponding to non-element symbols or no atom data are ignored.

**--FingerprintsLabel** *text*

SD data label or text file column label to use for fingerprints string in output SD or CSV/TSV text file(s) specified by *--output*. Default value: *TopologicalAtomTorsionsFingerprints*.

**-h, --help**

Print this help message.

**-k, --KeepLargestComponent** *Yes | No*

Generate fingerprints for only the largest component in molecule. Possible values: *Yes or No*. Default value: *Yes*.

For molecules containing multiple connected components, fingerprints can be generated in two different ways: use all connected components or just the largest connected component. By default, all atoms except for the largest connected component are deleted before generation of fingerprints.

**--OutDelim** *comma | tab | semicolon*

Delimiter for output CSV/TSV text file(s). Possible values: *comma, tab, or semicolon* Default value: *comma*.

**--output** *SD | FP | text | all*

Type of output files to generate. Possible values: *SD, FP, text, or all*. Default value: *text*.

**-o, --overwrite**

Overwrite existing files.

**-q, --quote** *Yes | No*

Put quote around column values in output CSV/TSV text file(s). Possible values: *Yes or No*. Default value: *Yes*

**-r, --root** *RootName*

New file name is generated using the root: *<Root>.<Ext>*. Default for new file names:

*<SDFFileName><TopologicalAtomTorsionsFP>.<Ext>*. The file type determines *<Ext>* value. The *sdf, fpf, csv, and tsv* *<Ext>* values are used for SD, FP, comma/semicolon, and tab delimited text files, respectively. This option is ignored for multiple input files.

**-v, --VectorStringFormat** *IDsAndValuesString | IDsAndValuesPairsString | ValuesAndIDsString | ValuesAndIDsPairsString*

Format of fingerprints vector string data in output SD, FP or CSV/TSV text file(s) specified by *--output* option. Possible values: *IDsAndValuesString | IDsAndValuesPairsString | ValuesAndIDsString | ValuesAndIDsPairsString*. Default value: *IDsAndValuesString*.

Examples:

```
FingerprintsVector;TopologicalAtomTorsions:AtomicInvariantsAtomTypes;3
3;NumericalValues;IDsAndValuesString;C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-
C.X3.B04 C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-N.X3.B03 C.X2.B02.H2-C.X2.BO
2.H2-C.X3.B03.H1-C.X2.B02.H2 C.X2.B02.H2-C.X2.B02.H2-C.X3.B03.H1-O...;
2 2 1 1 2 2 1 1 3 4 4 8 4 2 2 6 2 2 1 2 1 1 2 1 1 2 6 2 4 2 1 3 1
```

```
FingerprintsVector;TopologicalAtomTorsions:AtomicInvariantsAtomTypes;3
3;NumericalValues;IDsAndValuesPairsString;C.X1.B01.H3-C.X3.B03.H1-C.X3
.B04-C.X3.B04 2 C.X1.B01.H3-C.X3.B03.H1-C.X3.B04-N.X3.B03 2 C.X2.B02.H
2-C.X2.B02.H2-C.X3.B03.H1-C.X2.B02.H2 1 C.X2.B02.H2-C.X2.B02.H2-C.X3.B
03.H1-O.X1.B01.H1 1 C.X2.B02.H2-C.X2.B02.H2-N.X3.B03-C.X3.B04 2 C.X2.B
02.H2-C.X3.B03.H1-C.X2.B02.H2-C.X3.B03.H1 2 C.X2.B02.H2-C.X3.B03.H1...
```

**-w, --WorkingDir** *DirName*

Location of working directory. Default value: current directory.

## EXAMPLES

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create SampleTATFP.sdf, SampleTATFP.fpf and SampleTATFP.csv files containing sequential compound IDs in CSV file along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl --output all -r SampleTATFP  
-o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesPairsString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl --VectorStringFormat  
IDsAndValuesPairsString -r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using DREIDING atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a DREIDINGAtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using E-state atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a EStateAtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using functional class atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a FunctionalClassAtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using MMFF94 atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a MMFF94AtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using SLogP atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a SLogPAtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using SYBYL atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a SYBYLAtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using TPSA atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a TPSAAtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using UFF atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a UFFAtomTypes  
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using only AS,X atomic invariants atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing sequential compound IDs along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a AtomicInvariantsAtomTypes
--AtomicInvariantsToUse "AS,X" -r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing compoundID from molecule name line along with fingerprints vector strings, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a AtomicInvariantsAtomTypes
--DataFieldsMode CompoundID -CompoundIDMode MolName
-r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing compound IDs using specified data field along with fingerprints vector strings, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a AtomicInvariantsAtomTypes
--DataFieldsMode CompoundID -CompoundIDMode DataField --CompoundID
Mol_ID -r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing compound ID using combination of molecule name line and an explicit compound prefix along with fingerprints vector strings data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a AtomicInvariantsAtomTypes
--DataFieldsMode CompoundID -CompoundIDMode MolnameOrLabelPrefix
--CompoundID Cmpd --CompoundIDLabel MolID -r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing specific data fields columns along with fingerprints vector strings, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a AtomicInvariantsAtomTypes
--DataFieldsMode Specify --DataFields Mol_ID -r SampleTATFP
-o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create a SampleTATFP.csv file containing common data fields columns along with fingerprints vector strings, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a AtomicInvariantsAtomTypes
--DataFieldsMode Common -r SampleTATFP -o Sample.sdf
```

To generate topological atom torsions fingerprints using atomic invariants atom types in IDsAndValuesString format and create SampleTATFP.sdf, SampleTATFP.fpf and SampleTATFP.csv files containing all data fields columns in CSV file along with fingerprints data, type:

```
% TopologicalAtomTorsionsFingerprints.pl -a AtomicInvariantsAtomTypes
--DataFieldsMode All --output all -r SampleTATFP
-o Sample.sdf
```

## AUTHOR

Manish Sud <msud@san.rr.com>

## SEE ALSO

InfoFingerprintsFiles.pl, SimilarityMatricesFingerprints.pl, AtomNeighborhoodsFingerprints.pl, ExtendedConnectivityFingerprints.pl, MACCSKeysFingerprints.pl, PathLengthFingerprints.pl, TopologicalAtomPairsFingerprints.pl, TopologicalPharmacophoreAtomPairsFingerprints.pl, TopologicalPharmacophoreAtomTripletsFingerprints.pl

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