### $Chosen\ Data\ Set\ {\it https://github.com/openforcefield/nistdataselection}$

A total of 221 data points covering 104 unique molecules are to be optimized against. This will require approximately 242 unique simulation to be performed.

#### Data Points Per VdW SMIRKS Pattern

VdW SMIRKS	Binary $H_{mix}$	Binary $V_{excess}$	Pure $\rho$	Pure $\Delta H_{vap}$	Pure $\epsilon_0$
[#6X4:1]	49	32	66	26	30
[#1:1]- $[#6X4]$ - $[#7,#8,#9,#16,#17,#35]$	40	28	49	16	26
[#1:1]- $[#6X4]$	36	24	38	20	18
[#8:1]	35	24	18	16	8
[#1:1]-[#8]	35	16	29	6	22
[#6:1]	26	20	34	27	6
[#8X2H1+0:1]	24	14	29	6	22
[#8X2H0+0:1]	16	8	15	15	5
[#7:1]	15	6	19	7	8
[#1:1]-[#6X3]	11	6	17	26	1
[#9:1]	10	2	8	3	0
[#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]	9	6	11	14	1
[#35:1]	4	6	9	1	0
[#17:1]	4	4	10	2	0
[#16:1]	4	4	5	9	3

#### Unique Substances Per Data Type

Binary $H_{mix}$	Binary $V_{excess}$	Pure $\rho$	Pure $\Delta H_{vap}$	Pure $\epsilon_0$
29	16	77	30	30

#### Binary $H_{mix}$

$$H_2O$$

#### Binary $V_{excess}$

#### Pure $\rho$

#### Pure $\Delta H_{vap}$

#### Pure $\epsilon_0$

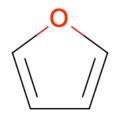
#### C(C(F)(F)F)O + C1CCOC1

#### ${\bf Structure}$

#### SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]
- [#9:1]

#### ${\bf Structure}$



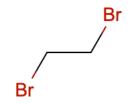
- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4] \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6X4:1]
- [#8X2H0+0:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101.3	0.212	0.788	je034076x.xml
298.15	101.3	0.717	0.283	$\rm je034076x.xml$

### C(CBr)Br

#### Structure



- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
  [#6X4:1]
  [#35:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
295.15	101.325	1	j.jct.2005.07.009.xml

#### COC=O

#### Structure

# \_\_\_\_\_0

#### SMIRKS Exercised

- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#6X3]( [#7,#8,#9,#16,#17,#35]) [#7,#8, #9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2015.05.031.xml

#### CC=O

Structure



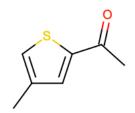
- [#1:1]-[#6X4] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35] [#6:1]
- [#6X4:1] [#8:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
289.15	101.325	1	je300810p.xml

### Cc1cc(sc1)C(=O)C

 ${\bf Structure}$ 



SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#16:1]

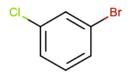
Pure Enthalpy Of Vaporization Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2008.03.008.xml

### c1cc(cc(c1)Br)Cl

Structure

SMIRKS Exercised



- [#1:1]-[#6X3] [#6:1] [#17:1] [#35:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je600573w.xml

#### Cc1ccsc1C=O

Structure

# S

#### SMIRKS Exercised

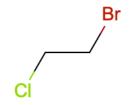
- [#1:1]-[#6X4]
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#16:1]

Pure Enthalpy Of Vaporization Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2008.02.004.xml

### C(CBr)Cl

#### Structure



- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1] [#17:1] [#35:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je034259j.xml

#### C(C(F)(F)F)O + CCCO

#### ${\bf Structure}$

#### SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]
- [#9:1]

#### ${\bf Structure}$

# OH

#### SMIRKS Exercised

- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4] \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

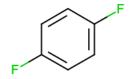
#### Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.20133	0.79867	j.tca.2007.04.012.xml
298.15	101	0.79867	0.20133	$\rm j.tca.2007.04.012.xml$

### c1cc(ccc1F)F

Structure

SMIRKS Exercised



- [#1:1]-[#6X3] [#6:1] [#9:1]

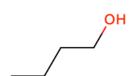
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
296.1	101.325	1	je8006474.xml

#### CCCCO

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	je300632p.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	je900503p.xml

### CC(=O)c1cccs1

#### ${\bf Structure}$

#### SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#16:1]

#### Pure Density Data

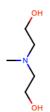
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.fluid.2016.10.026.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.fluid.2016.10.026.xml

### CN(CCO)CCO

#### ${\bf Structure}$

#### SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$

- [#1:1]-[#8] [#1:1]-[#8] [#6X4:1] [#8X2H1+0:1] [#7:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je050463q.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je600515j.xml

### C(C(F)(F)F)(C(F)(F)F)O

Structure

SMIRKS Exercised

- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8] [#6X4:1] [#8X2H1+0:1] [#9:1]

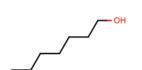
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je500455u.xml

#### CCCCCCO

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

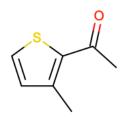
#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	je500381c.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	je060248p.xml

#### Cc1ccsc1C(=O)C

 ${\bf Structure}$ 



SMIRKS Exercised

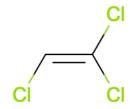
- [#1:1]-[#6X4] [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#16:1]

Pure Enthalpy Of Vaporization Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2008.03.008.xml

## C(=C(Cl)Cl)Cl

#### Structure



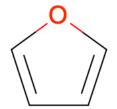
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
  [#6:1]
  [#17:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je201211f.xml

#### c1ccoc1

#### Structure



- [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35] [#6:1] [#8X2H0+0:1]

Pure Density Data

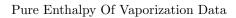
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
293.15	101.325	1	j.jct.2016.07.010.xml

# c1cc(sc1)CC#N

#### ${\bf Structure}$

# SMIRKS Exercised $\bullet$ [#1:1]-[#6X4]

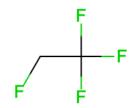
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X2:1]
- [#6X4:1]
- [#7:1]
- [#16:1]



Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2007.06.020.xml

### C(C(F)(F)F)F

#### Structure



- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1] [#9:1]

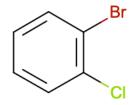
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
293.219	100.049	1	je0497496.xml

### c1ccc(c(c1)Cl)Br

Structure

SMIRKS Exercised



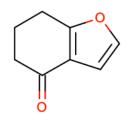
- [#1:1]-[#6X3] [#6:1] [#17:1] [#35:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je600573w.xml

#### c1coc2c1C(=O)CCC2

#### ${\bf Structure}$



#### SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

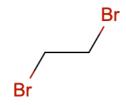
Pure Enthalpy Of Vaporization Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2012.07.008.xml

#### C(CBr)Br + CCCCOC(=O)C

#### ${\bf Structure}$

#### SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6X4:1]
- [#35:1]

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

#### Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2146	0.7854	j.jct.2009.05.006.xml
298.15	101	0.7661	0.2339	j.jct.2009.05.006.xml

#### Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2547	0.7453	j.jct.2009.05.006.xml
298.15	101	0.7476	0.2524	$\rm j.jct.2009.05.006.xml$

## C(=O)(C(F)(F)F)O

Structure

SMIRKS Exercised

- [#1:1]-[#8]

- [#6:1] [#6:1] [#6X4:1] [#8:1] [#8X2H1+0:1]
- [#9:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
293.15	101.325	1	j.fluid.2015.08.012.xml

$$_{\mathrm{O}}^{\mathrm{CCOC}(=\mathrm{O})/\mathrm{C}=\mathrm{C}(/\mathrm{C})}$$

Structure

SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#6X3]
- [#1:1]-[#8]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1] [#8X2H1+0:1]

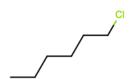
Pure Enthalpy Of Vaporization Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je050179z.xml

#### CCCCCCl + c1cccc1

#### ${\bf Structure}$

#### SMIRKS Exercised



- $\bullet$  [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#6X4:1]
- [#17:1]

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X3]
- [#6:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2862	0.7138	je025625m.xml
298.15	101	0.7352	0.2648	je025625m.xml

#### Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2877	0.7123	$\rm je025625m.xml$
298.15	101	0.772	0.228	$\rm je025625m.xml$

#### Cn1ccnc1

#### Structure

- $\bullet \ [\#1:1]\text{-}[\#6X4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35] \\ \bullet \ [\#1:1]\text{-}[\#6X3] \ [\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#6X3]( [#7,#8,#9,#16,#17,#35]) [#7,#8, #9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je200093f.xml

### CN(C)C=O

#### ${\bf Structure}$



#### SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#6X3]( [#7,#8,#9,#16,#17,#35]) [#7,#8, #9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#7:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je5002945.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	j.fluid.2009.07.009.xml

$$C(C(F)(F)F)O + CO$$

#### Structure

# F HO F

#### SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]
- [#9:1]

#### ${\bf Structure}$

#### SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

#### Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.29705	0.70295	j.tca.2007.04.012.xml
298.15	101	0.70985	0.29015	$\rm j.tca.2007.04.012.xml$

#### C(COCCO)O + O

 ${\bf Structure}$ 

SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]
- [#8X2H0+0:1]
- [#8X2H1+0:1]

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2002	0.7998	j.tca.2009.06.004.xml
298.15	101	0.7906	0.2094	$\rm j.tca. 2009. 06.004.xml$

### C1COCCN1 + O

#### ${\bf Structure}$

SMIRKS Exercised

- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#1:1]\text{-}[\#7]$

- [#6X4:1] [#8X2H0+0:1]
- [#7:1]

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.7149	0.2851	j.jct.2015.06.006.xml
313.15	101	0.2968	0.7032	$\rm j.jct.2015.06.006.xml$

## CCOC(=0)c1cccs1

#### ${\bf Structure}$

#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]
- [#16:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2012.09.007.xml

# c1cnc(nc1O)O

Structure

SMIRKS Exercised

- [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6:1]
- [#8X2H1+0:1]
- [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.jct.2012.07.022.xml

#### CCCOCCO

#### Structure

# ОН

#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H0+0:1]
- [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.jct.2007.09.004.xml

#### Pure Dielectric Constant Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.jct.2007.09.004.xml

# CCOC(=O)CN=[N+]=[N-]

 ${\bf Structure}$ 

#### SMIRKS Exercised

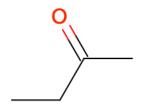
- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4] \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]
- [#7:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2011.05.028.xml

$$CCC(=O)C$$

Structure

SMIRKS Exercised



- [#1:1]-[#6X4] [#6:1] [#6X4:1] [#8:1]

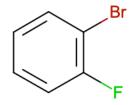
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2015.04.017.xml

# c1ccc(c(c1)F)Br

Structure

SMIRKS Exercised



- [#1:1]-[#6X3] [#6:1]

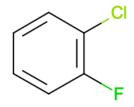
- [#9:1] [#35:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2014.12.023.xml

# c1ccc(c(c1)F)Cl

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X3] [#6:1]

- [#9:1] [#17:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2014.12.023.xml

# C(CO)NCCO

#### ${\bf Structure}$

#### SMIRKS Exercised

- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#1:1]\text{-}[\#7]$
- [#1:1]-[#8]
- [#6X4:1] [#8X2H1+0:1]
- [#7:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je050463q.xml

#### Pure Dielectric Constant Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je600515j.xml

### Cc1cccc1N

Structure

#### SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3] [#1:1]-[#7]
- [#6:1]
- [#6X4:1] [#7:1]

Pure Density Data

NH<sub>2</sub>

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2011.10.002.xml

#### CCCCCO

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2015.03.040.xml

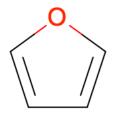
#### Pure Dielectric Constant Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.tca.2012.05.036.xml

## C1CCOC1

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]
  [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
  [#6X4:1]
  [#8X2H0+0:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2010.08.006.xml

## c1cscc1CC#N

#### ${\bf Structure}$



#### SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X2:1]
- [#6X4:1]
- [#7:1]
- [#16:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2007.06.020.xml

## O + c1ccncc1

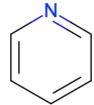
 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#8] [#8:1]

 ${\bf Structure}$ 

SMIRKS Exercised



- $\bullet \ [\#1:1]\text{-}[\#6X3] \\ \bullet \ [\#1:1]\text{-}[\#6X3] \ [\#7,\#8,\#9,\#16,\#17,\#35] \\ \bullet \ [\#6:1]$
- [#7:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
297.15	101	0.27	0.73	j.fluid.2009.10.018.xml
297.15	101	0.75	0.25	j.fluid.2009.10.018.xml

# Cc1cccc(n1)C + O

Structure

SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3] [#6:1]
- [#6X4:1]
- [#7:1]

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.004618	0.995382	$\rm je200093f.xml$

## COc1cccc(c1OC)O

 ${\bf Structure}$ 

# SMIRKS Exercised

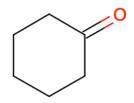
- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}3]$
- [#1:1]-[#8]
- [#6:1]
- [#6X4:1] [#8X2H0+0:1]
- [#8X2H1+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je025641j.xml

# C1CCC(=O)CC1

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X4] [#6:1] [#6X4:1] [#8:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2004.07.010.xml

#### Pure Dielectric Constant Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je200682t.xml

#### CCO

Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je1013476.xml

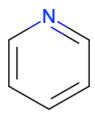
Pure Dielectric Constant Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	j.fluid.2009.07.009.xml

#### c1ccncc1

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35] [#6:1] [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je100472t.xml

#### Cc1ccncc1

#### Structure

#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#7:1]

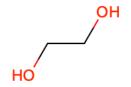
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2011.10.002.xml

$$C(CO)O + O$$

 ${\bf Structure}$ 

SMIRKS Exercised



- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#1:1]\text{-}[\#8]$
- [#6X4:1]
- [#8X2H1+0:1]

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2051	0.7949	j.tca.2009.06.004.xml
298.15	101	0.7909	0.2091	j.tca.2009.06.004.xml

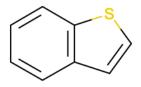
Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.25008	0.74992	j.fluid.2013.06.041.xml
298.15	101	0.77876	0.22124	j.fluid.2013.06.041.xml

# c1ccc2c(c1)ccs2

Structure

#### SMIRKS Exercised



- [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35] [#6:1] [#16:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2013.12.029.xml

# CC(=CCOC(=O)C)C

#### ${\bf Structure}$

#### SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#6X3]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2015.02.015.xml

## CO + O

 ${\bf Structure}$ 

SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]
- [#8X2H1+0:1]

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2	0.8	j.tca.2006.02.028.xml
298.15	101	0.8	0.2	j.tca.2006.02.028.xml

Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	100	0.25	0.75	j.jct.2004.03.011.xml
298.15	100	0.75	0.25	j.jct.2004.03.011.xml

$$C(C(F)(F)F)O + O$$

 ${\bf Structure}$ 

SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]
- [#8X2H1+0:1]
- [#9:1]

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.29878	0.70122	j.tca.2007.04.012.xml
298.15	101	0.70779	0.29221	$\rm j.tca.2007.04.012.xml$

# CC(=C)C(=O)OCCO

#### ${\bf Structure}$

# OH

#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#6X3]
- [#1:1]-[#8]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]
- [#8X2H1+0:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je050223a.xml

# c1c(cc(c(c1F)F)F)F

Structure

SMIRKS Exercised



- [#1:1]-[#6X3] [#6:1] [#9:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
296.3	101.325	1	je8006474.xml

#### CCCCCO

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	je501133u.xml

#### Pure Dielectric Constant Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	je060248p.xml

# Cc1ccc(s1)C=O

 ${\bf Structure}$ 

#### SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#16:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2008.02.004.xml

# C(CCBr)CCl

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1]

- [#17:1] [#35:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je201002j.xml

# C1CCC(=O)C1

#### Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4] [#6:1] [#6X4:1] [#8:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je200468r.xml

#### Pure Dielectric Constant Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je200682t.xml

$$CCCC(=0)OC + O$$

Structure

 ${\bf SMIRKS} \,\, {\bf Exercised}$ 

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Structure

SMIRKS Exercised

 $H_2O$ 

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101.3	0.997803	0.002197	je300280s.xml

$$C(=C(F)F)(C(F)(F)F)F$$

Structure

SMIRKS Exercised



- [#6:1] [#6X4:1] [#9:1]

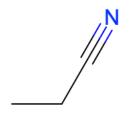
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.28	100.4	1	je900596d.xml

# CCC#N

Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4] [#6X2:1] [#6X4:1] [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.tca.2009.10.001.xml

$$C(C(F)(F)F)(C(F)(F)F)O\,+\,O$$

 ${\bf Structure}$ 

SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]
- [#8X2H1+0:1]
- [#9:1]

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#8]
- [#8:1]

Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.205	0.795	j.jct.2011.11.019.xml
298.15	101	0.8065	0.1935	j.jct.2011.11.019.xml

### C = CCCl

Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#6X3] [#6:1]

- [#6X4:1] [#17:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
293	101.325	1	je034018b.xml

# C(CO)N

## ${\bf Structure}$

## SMIRKS Exercised

- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#7] [#1:1]-[#8]

- [#6X4:1] [#8X2H1+0:1]
- [#7:1]

## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101	1	je3013205.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101	1	j.fluid.2008.01.024.xml

# C(COCCOCCO)O

## ${\bf Structure}$

## SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]

- [#8X2H0+0:1] [#8X2H1+0:1]

## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.jct.2007.09.004.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.jct.2007.09.004.xml

$$CCCOC(=0)C + O$$

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

 ${\bf Structure}$ 

SMIRKS Exercised

 $H_2O$ 

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
318.15	101.3	0.997504	0.002496	je300280s.xml

# CC(C)(CO)N

## ${\bf Structure}$

# -NH<sub>2</sub>

## SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#7]
- [#1:1]-[#8]
- [#6X4:1] [#8X2H1+0:1]
- [#7:1]

## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je050463q.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je600515j.xml

## COc1ccccn1

Structure

## SMIRKS Exercised

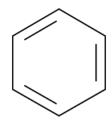
- $\bullet \ [\#1:1] \hbox{-} [\#6X4] \hbox{-} [\#7,\#8,\#9,\#16,\#17,\#35] \\ \bullet \ [\#1:1] \hbox{-} [\#6X3] \ ]$
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1] [#8X2H0+0:1]
- [#7:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2011.11.032.xml

## c1cccc1

## Structure

## SMIRKS Exercised



- [#1:1]-[#6X3] [#6:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2008.09.005.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298	101.325	1	je800091s.xml

# CCCCOC(=O)C

## ${\bf Structure}$

## SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6:1]
- [#6X4:1] [#8:1]
- [#8X2H0+0:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2014.01.012.xml

$$CS(=O)C$$

Structure

## SMIRKS Exercised



- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1] [#8:1] [#16:1]

Pure Density Data

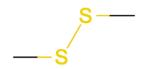
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101	1	je3007474.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101	1	je400149j.xml

## $\mathbf{CSSC}$

Structure

## SMIRKS Exercised



- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1] [#16:1]

## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	acs.jced.7b00078.xml

# C/C=C/C=C/COC(=O)C

 ${\bf Structure}$ 

## SMIRKS Exercised

- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4] \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#6X3]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2015.02.015.xml

# C(COCCO)O

## ${\bf Structure}$

## SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]

- [#8X2H0+0:1] [#8X2H1+0:1]

## Pure Density Data

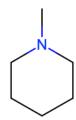
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	je300827f.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.jct.2007.09.004.xml

## CN1CCCCC1

## Structure

## SMIRKS Exercised



- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1] [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2010.05.001.xml

## CCc1ccc(s1)C=O

## ${\bf Structure}$

## SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#16:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2008.02.004.xml

# c1cc[nH]c1

## Structure

## SMIRKS Exercised

- [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35] [#1:1]-[#7]

- [#6:1] [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je700233p.xml

# CC(=O)N(C)C

## ${\bf Structure}$

# N-

## SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#7:1]

## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	acs.jced.6b00354.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	j.fluid.2009.07.009.xml

## CC(C)(C)O + COC = O

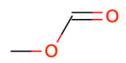
#### Structure

# — ОН

## SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

#### Structure



## SMIRKS Exercised

- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#6X3]( [#7,#8,#9,#16,#17,#35]) [#7,#8, #9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

## Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
299.15	101.32	0.2778	0.7222	je034290l.xml
299.15	101.32	0.7127	0.2873	je034290l.xml

## Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
299.15	101.32	0.2778	0.7222	je034290l.xml
299.15	101.32	0.7581	0.2419	je034290l.xml

## Cn1ccnc1 + O

#9,#16,#17,#35]

• [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] • [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]

 $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}3](\ \ [\#7,\#8,\#9,\#16,\#17,\#35])\ \ [\#7,\#8,$ 

SMIRKS Exercised

Structure

# N N

• [#6:1] • [#6X4:1]

• [#7:1]

Structure

SMIRKS Exercised

H<sub>2</sub>O

- [#1:1]-[#8]
- [#8:1]

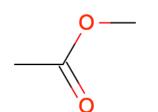
Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.006766	0.993234	$\rm je200093f.xml$

$$CC(=O)OC$$

 ${\bf Structure}$ 

## SMIRKS Exercised



- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6:1]
- [#6X4:1] [#8:1]
- [#8X2H0+0:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2015.12.029.xml

# CC(=O)OCCc1ccccc1

 ${\bf Structure}$ 

## SMIRKS Exercised

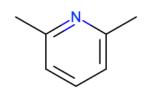
- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4] \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#6X3]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2015.02.015.xml

# Cc1cccc(n1)C

Structure

SMIRKS Exercised



- [#1:1]-[#6X4] [#1:1]-[#6X3] [#6:1] [#6X4:1] [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je200093f.xml

## CC(=O)c1cccc(c1)OC

 ${\bf Structure}$ 

## SMIRKS Exercised

- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4] \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#6X3]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2014.03.027.xml

# C(CO)CO

## ${\bf Structure}$

## SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#8]
- [#6X4:1] [#8X2H1+0:1]

## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.tca.2006.08.006.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je060333x.xml

## C1CC(=O)OC1

## ${\bf Structure}$

# 0

## SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	je100803e.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	je900503p.xml

# 

Structure

SMIRKS Exercised



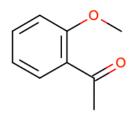
- [#6X4:1] [#9:1]
- [#35:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je050056e.xml

# CC(=O)c1ccccc1OC

 ${\bf Structure}$ 



SMIRKS Exercised

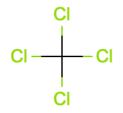
- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#6X3]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2014.03.027.xml

# C(Cl)(Cl)(Cl)Cl

Structure

SMIRKS Exercised



- [#6X4:1] [#17:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je100489z.xml

## Cc1cccnc1

## Structure

## SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3] [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2011.10.002.xml

# CCCOC(=O)C

 ${\bf Structure}$ 

SMIRKS Exercised

- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4] \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6:1]
- [#6X4:1] [#8:1]
- [#8X2H0+0:1]

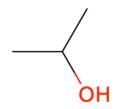
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je300974g.xml

# CC(C)O

## ${\bf Structure}$

## SMIRKS Exercised



- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]

- [#6X4:1] [#8X2H1+0:1]

## Pure Density Data

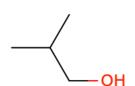
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
300.15	101.325	1	j.jct.2011.10.028.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
300.15	101.325	1	j.jct.2011.10.028.xml

# CC(C)CO

## ${\bf Structure}$

## SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]

- [#6X4:1] [#8X2H1+0:1]

## Pure Density Data

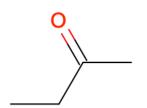
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	s10765-007-0204-0.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	je800593p.xml

$$CCC(=O)C + CS(=O)C$$

## ${\bf Structure}$

## SMIRKS Exercised



- [#1:1]-[#6X4]
- [#6:1]
- [#6X4:1]
- [#8:1]

## ${\bf Structure}$

## SMIRKS Exercised



- $\begin{array}{l} [\#1:1]\text{-}[\#6\mathrm{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ [\#6\mathrm{X}4:1] \end{array}$
- [#8:1]
- [#16:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2203	0.7797	j.jct.2007.04.004.xml
298.15	101	0.7615	0.2385	j.jct.2007.04.004.xml

## Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
303.15	101	0.212	0.788	j.jct.2007.08.006.xml
303.15	101	0.734	0.266	j.jct.2007.08.006.xml

## CCCCCCCO

## Structure

## SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

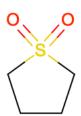
## Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	je400630f.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	je060248p.xml

# C1CCS(=O)(=O)C1

## ${\bf Structure}$



## SMIRKS Exercised

- $\bullet \ [\#1:1]\text{-}[\#6X4] \\ \bullet \ [\#1:1]\text{-}[\#6X4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#6X4:1]$

- [#8:1] [#16:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.tca.2012.10.004.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.tca.2012.10.004.xml

## CC(=O)OC + CC(C)(C)O

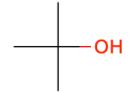
#### Structure

## SMIRKS Exercised

- $\bullet$  [#1:1]-[#6X4]
- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

## ${\bf Structure}$

## SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

## Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
318.15	101.32	0.2372	0.7628	je034290l.xml
318.15	101.32	0.7696	0.2304	je034290l.xml

## Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
303.15	101.32	0.2568	0.7432	je034290l.xml
303.15	101.32	0.7519	0.2481	je034290l.xml

# CCCC(=O)OC

Structure

SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6:1]
- [#6X4:1] [#8:1]
- [#8X2H0+0:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je300280s.xml

## Cc1ccccc1N + c1ccncc1

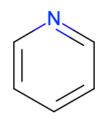
## ${\bf Structure}$

# NH<sub>2</sub>

## SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3]
- [#1:1]-[#7]
- [#6:1]
- [#6X4:1]
- [#7:1]

## ${\bf Structure}$



## SMIRKS Exercised

- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#7:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
308.15	101	0.2681	0.7319	j.jct.2010.12.028.xml
308.15	101	0.7735	0.2265	j.jct.2010.12.028.xml

Binary Excess Molar Volume Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2374	0.7626	j.jct.2010.12.028.xml
298.15	101	0.7678	0.2322	$\rm j.jct.2010.12.028.xml$

#### Cc1ccccc1N + Cc1ccncc1

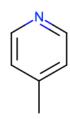
#### ${\bf Structure}$

# NH<sub>2</sub>

#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3]
- [#1:1]-[#7]
- [#6:1]
- [#6X4:1]
- [#7:1]

#### ${\bf Structure}$



#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#7:1]

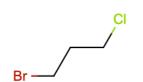
#### Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
308.15	101	0.2715	0.7285	j.jct.2010.12.028.xml
308.15	101	0.7827	0.2173	j.jct.2010.12.028.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2655	0.7345	j.jct.2010.12.028.xml
298.15	101	0.7674	0.2326	j.jct.2010.12.028.xml

# C(CCl)CBr

#### Structure



- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1]

- [#17:1] [#35:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je201002j.xml

## Cc1ccsc1C#N

#### ${\bf Structure}$

#### SMIRKS Exercised

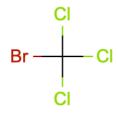
- [#1:1]-[#6X4] [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X2:1]
- [#6X4:1]
- [#7:1]
- [#16:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2007.06.020.xml

# C(Cl)(Cl)(Cl)Br

Structure

SMIRKS Exercised



- [#6X4:1] [#17:1] [#35:1]

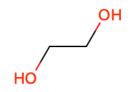
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2015.03.023.xml

## C(CO)O

#### ${\bf Structure}$

#### SMIRKS Exercised



- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#1:1]\text{-}[\#8]$
- [#6X4:1]
- [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2012.08.024.xml
303.15	101.325	1	$\rm j.jct.2012.08.024.xml$

#### Pure Enthalpy Of Vaporization Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je060333x.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	j.fluid.2009.07.009.xml

## CCCCCCl

Structure



- [#1:1]-[#6X4] [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#6X4:1] [#17:1]

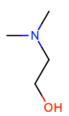
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2013.12.024.xml

# CN(C)CCO

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8] [#6X4:1] [#8X2H1+0:1] [#7:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	acs.jced.5b00282.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	j.fluid.2009.07.009.xml

# C(CCO)CO

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#8]
- [#6X4:1] [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je401020e.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je060333x.xml

$$C(CO)CO + O$$

 ${\bf Structure}$ 

#### SMIRKS Exercised

- ОН
- $\bullet$  [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

 ${\bf Structure}$ 

#### SMIRKS Exercised

H<sub>2</sub>O

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2087	0.7913	j.jct.2005.06.018.xml
298.15	101	0.743	0.257	j.jct.2005.06.018.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2554	0.7446	j.jct.2009.11.018.xml
298.15	101	0.7551	0.2449	j.jct.2009.11.018.xml

# Cn1cccc1C(=O)OC

 ${\bf Structure}$ 

# N O

SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]
- [#7:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2013.08.004.xml

$$C(CCO)CO + O$$

 ${\bf Structure}$ 

#### SMIRKS Exercised

- ОН
- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]$
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

 ${\bf Structure}$ 

#### SMIRKS Exercised

H<sub>2</sub>O

- [#1:1]-[#8]
- [#8:1]

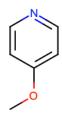
Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2658	0.7342	j.jct.2005.06.018.xml
298.15	101	0.7947	0.2053	$\rm j.jct.2005.06.018.xml$

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2297	0.7703	j.jct.2009.11.018.xml
298.15	101	0.7847	0.2153	j.jct.2009.11.018.xml

### COc1ccncc1

#### Structure



#### SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8X2H0+0:1]
- [#7:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2011.11.032.xml

# C(C(Br)Br)(Br)Br

Structure

# Br Br Br Br

- [#1:1]-[#6X4](-[#7,#8,#9,#16,#17,#35])-[#7,#8, #9,#16,#17,#35] [#6X4:1] [#35:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
293.15	101	1	j.jct.2005.03.027.xml

# C(C(F)(F)F)O

#### ${\bf Structure}$

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$

- [#1:1]-[#8] [#1:1]-[#8] [#6X4:1] [#8X2H1+0:1] [#9:1]

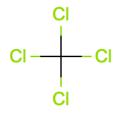
Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je025655p.xml

# C(Cl)(Cl)(Cl)Cl + CCC#N

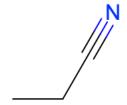
#### ${\bf Structure}$

#### SMIRKS Exercised



- [#6X4:1] [#17:1]

#### Structure



- [#1:1]-[#6X4] [#6X2:1]
- [#6X4:1]
- [#7:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2551	0.7449	je100489z.xml
298.15	101	0.7326	0.2674	je100489z.xml

# C(CO)N(CCO)CCO

#### ${\bf Structure}$

#### SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]
- [#8X2H1+0:1]
- [#7:1]

Pure Density Data

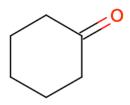
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je050463q.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.325	1	je600515j.xml

# C1CCC(=O)CC1 + CS(=O)C

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#6:1]
- [#6X4:1]
- [#8:1]

#### ${\bf Structure}$

#### SMIRKS Exercised



- $\begin{array}{l} [\#1:1]\text{-}[\#6\mathrm{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ [\#6\mathrm{X}4:1] \end{array}$
- [#8:1]
- [#16:1]

#### Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2762	0.7238	j.jct.2007.04.004.xml
298.15	101	0.7569	0.2431	j.jct.2007.04.004.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
303.15	101	0.2241	0.7759	j.jct.2007.08.006.xml
303.15	101	0.7218	0.2782	j.jct.2007.08.006.xml

### C1COCCN1

#### Structure

- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#7] [#6X4:1]

- [#8X2H0+0:1] [#7:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je020191g.xml

### $\mathbf{CO}$

Structure

#### SMIRKS Exercised



- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#1:1]\text{-}[\#8]$
- [#6X4:1]
- [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	j.jct.2011.08.028.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101	1	je800593p.xml

## C(C(F)(F)F)O + CCO

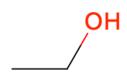
#### ${\bf Structure}$

# F HO E

#### SMIRKS Exercised

- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]
- [#9:1]

#### Structure



#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

#### Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.29919	0.70081	j.tca.2007.04.012.xml
298.15	101	0.79638	0.20362	$\rm j.tca.2007.04.012.xml$

# CC(=O)c1ccco1

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#6X4] [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.jct.2008.08.004.xml

# c1cc(cc(c1)Cl)F

Structure

SMIRKS Exercised

- [#1:1]-[#6X3] [#6:1]

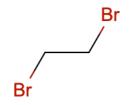
- [#9:1] [#17:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2014.12.023.xml

## C(CBr)Br + CCCCOC=O

#### Structure

#### SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6X4:1]
- [#35:1]

#### ${\bf Structure}$

#### SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#6X3]( [#7,#8,#9,#16,#17,#35]) [#7,#8, #9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.3993	0.6007	j.jct.2009.05.006.xml
298.15	101	0.7275	0.2725	j.jct.2009.05.006.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.3993	0.6007	j.jct.2009.05.006.xml
298.15	101	0.7738	0.2262	$\rm j.jct.2009.05.006.xml$

### Cc1cccnc1 + O

 ${\bf Structure}$ 

N

 ${\bf Structure}$ 

SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#7:1]

SMIRKS Exercised

 $H_2O$ 

- [#1:1]-[#8]
- [#8:1]

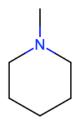
Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.005509	0.994491	je200093f.xml

### CN1CCCCC1 + O

#### ${\bf Structure}$

#### ${\bf SMIRKS} \,\, {\bf Exercised}$



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#6X4:1]
- [#7:1]

#### ${\bf Structure}$

#### SMIRKS Exercised

# H<sub>2</sub>C

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.004409	0.995591	je200093f.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.2452	0.7548	j.fluid.2010.05.001.xml
308.15	101	0.78	0.22	$\rm j.fluid.2010.05.001.xml$

#### CCCCOC=O

#### Structure

- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35]
- [#1:1]-[#6X3]( [#7,#8,#9,#16,#17,#35]) [#7,#8, #9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#8:1]
- [#8X2H0+0:1]

Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	j.fluid.2013.11.026.xml

# C(COCCOCCOCCO)O

#### ${\bf Structure}$

## SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#1:1]-[#8] [#6X4:1]

- [#8X2H0+0:1] [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.3	1	j.fluid.2007.09.009.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
303.15	101.3	1	j.jct.2007.09.004.xml

#### CCCO

Structure

#### SMIRKS Exercised



- [#1:1]-[#6X4]
- [#1:1]-[#6X4]-[#7,#8,#9,#16,#17,#35] [#1:1]-[#8]
- [#6X4:1]
- [#8X2H1+0:1]

#### Pure Density Data

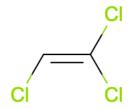
Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
300.15	101.325	1	j.jct.2011.10.028.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
300.15	101.325	1	j.jct.2011.10.028.xml

# $\mathrm{C}(=\!\mathrm{C}(\mathrm{Cl})\mathrm{Cl})\mathrm{Cl} + \mathrm{C}(\mathrm{CBr})\mathrm{Br}$

#### ${\bf Structure}$

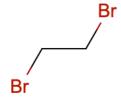
#### SMIRKS Exercised



- $\bullet \ [\#1:1]\text{-}[\#6\text{X}3] \ [\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6:1]
- [#17:1]

#### ${\bf Structure}$

#### SMIRKS Exercised



- $\bullet \ \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]$
- [#6X4:1]
- [#35:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
303.15	101.325	0.2077	0.7923	j.jct.2004.11.013.xml
303.15	101.325	0.7903	0.2097	j.jct.2004.11.013.xml

### Cc1ccncc1 + O

 ${\bf Structure}$ 

# N

SMIRKS Exercised

- [#1:1]-[#6X4]
- [#1:1]-[#6X3]
- [#1:1]-[#6X3] [#7,#8,#9,#16,#17,#35]
- [#6:1]
- [#6X4:1]
- [#7:1]

 ${\bf Structure}$ 

SMIRKS Exercised

 $H_2O$ 

- [#1:1]-[#8]
- [#8:1]

Binary Enthalpy Of Mixing Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Mole Fraction 2	Source
298.15	101	0.005492	0.994508	je200093f.xml

# COc1cccc(c1)O

 ${\bf Structure}$ 

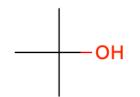
- $\bullet \ [\#1:1]\text{-}[\#6\text{X}4]\text{-}[\#7,\#8,\#9,\#16,\#17,\#35]} \\ \bullet \ [\#1:1]\text{-}[\#6\text{X}3]$
- [#1:1]-[#8]
- [#6:1]
- [#6X4:1] [#8X2H0+0:1]
- [#8X2H1+0:1]

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	101.325	1	je025641j.xml

# CC(C)(C)O

#### ${\bf Structure}$

#### SMIRKS Exercised



- [#1:1]-[#6X4] [#1:1]-[#8] [#6X4:1]

- [#8X2H1+0:1]

#### Pure Density Data

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	j.tca.2016.03.026.xml

Temperature (K)	Pressure (kPa)	Mole Fraction 1	Source
298.15	100	1	je3007666.xml