Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy

Table 1 - Oral Slope Factor (SFo)

Chemicals	CAS #	Oral Slope Factor, Sfo (kg-day /mg)			
		UST	Agency-Wide		Ratio
Benzene	71-43-2	2.9E-02	3.5E-02	*m*	**0.83**
Toluene	108-88-3	NA	NA		**NA**
Ethylbenzene	100-41-4	NA	NA		**NA**
Xylenes (mixed)	1330-20-7	NA	NA		**NA**
Ethylene Dibromide (EDB)	106-93-4	8.5E+01	2.0E+00	*i*	**42.50**
Ethylene Dichloride (EDC)	107-06-2	9.1E-02	9.1E-02	*i*	**1.00**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	3.3E-03	1.8E-03	*c*	**1.83**
Acenaphthene	83-32-9	NA	NA		**NA**
Anthracene	120-12-7	NA	NA		**NA**
Benzo(a)anthracene	56-55-3	7.3E-01	7.3E-01	*n*	**1.00**
Benzo(a)pyrene	50-32-8	7.3E+00	7.3E+00	*i*	**1.00**
Benzo(b)fluoranthene	205-99-2	7.3E-01	7.3E-01	*n*	**1.00**
Benzo(k)fluoranthene	207-08-9	7.3E-02	7.3E-02	*n*	**1.00**
Chrysene	218-01-9	7.3E-03	7.3E-03	*n*	**1.00**
Dibenzo(a,h)anthracene	53-70-3	7.3E+00	7.3E+00	*n*	**1.00**
Fluoranthene	206-44-0	NA	NA		**NA**
Fluorene	86-73-7	NA	NA		**NA**
Naphthalene	91-20-3	NA	1.2E-01	*r*	**NA**
Pyrene	129-00-0	NA	NA		**NA**
TPH-GRO	NA	NA	NA		**NA**
TPH-DRO	NA	NA	NA		**NA**
TPH-ORO	NA	NA	NA		**NA**
>C6 - C8 (Aliphatics)	NA	NA	NA		**NA**
>C8 - C10 (Aliphatics)	NA	NA	NA		**NA**
>C10 - C12 (Aliphatics)	NA	NA	NA		**NA**
>C12 - C16 (Aliphatics)	NA	NA	NA		**NA**
>C16 - C21 (Aliphatics)	NA	NA	NA		**NA**
>C21 - C35 (Aliphatics)	NA	NA	NA		**NA**
>C8 - C10 (Aromatics)	NA	NA	NA		**NA**
>C10 - C12 (Aromatics)	NA	NA	NA		**NA**
>C12 - C16 (Aromatics)	NA	NA	NA		**NA**
>C16 - C21 (Aromatics)	NA	NA	NA		**NA**
>C21 - C35 (Aromatics)	NA	NA	NA		**NA**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	NA	NA		**NA**
Tertiary-butyl- alcohol (TBA)	75-65-0	NA	NA		**NA**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	NA	NA		**NA**
Diisopropyl ether (DIPE)	108-20-3	NA	NA		**NA**
Ethanol	64-17-5	NA	NA		**NA**
Methanol	67-56-1	NA	NA		**NA**
Arsenic	7440-38-2	1.5E+00	1.5E+00	*i*	**1.00**
Barium	7440-39-3	NA	NA		**NA**
Cadmium	7440-43-9	NA	3.8E-01	*c*	**NA**
Chromium III	7440-47-3	NA	NA		**NA**
Chromium VI	18540-29-9	NA	4.2E+01	*r*	**NA**
Lead	7439-92-1	NA	NA		**NA**
Selenium	7782-49-2	NA	NA		**NA**

Notes:

1. NA: Not Available or Not Applicable.

2. Ratio = UST/Agency-Wide.

3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be higher than UST target levels.

4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be lower than UST target levels.

5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.

6. The letters in the table represent following sources for Agency-Wide:

i - USEPA IRIS

p - USEPA PPRTV's

n - USEPA NCEA

c - CALEPA OEHHA

t - TCEQ's TRRP Tier 1 PCL Table

h - HEAST

r - Missing value; value showing is identical to a value available for another route of exposure

m -MDNR/MDHHS Memo, August 12, 2004 and September 13, 2004. COCs -Benzene, Cadmium.

Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy

Table 2 - Inhalation Slope Factor (SFi)

Chemicals	CAS #	Inhalation Slope Factor, SFi (kg-day/mg)			
		UST	Agency-Wide		Ratio
Benzene	71-43-2	2.9E-02	1.8E-02	*m*	**1.66**
Toluene	108-88-3	NA	NA		**NA**
Ethylbenzene	100-41-4	NA	NA	*n*	**NA**
Xylenes (mixed)	1330-20-7	NA	NA		**NA**
Ethylene Dibromide (EDB)	106-93-4	7.7E-01	2.1E+00	*i*	**0.37**
Ethylene Dichloride (EDC)	107-06-2	9.1E-02	9.1E-02	*i*	**1.00**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	3.5E-04	9.1E-04	*n*	**0.38**
Acenaphthene	83-32-9	NA	NA		**NA**
Anthracene	120-12-7	NA	NA		**NA**
Benzo(a)anthracene	56-55-3	3.1E-01	3.9E-01	*c*	**0.79**
Benzo(a)pyrene	50-32-8	6.1E+00	3.9E+00	*c*	**1.56**
Benzo(b)fluoranthene	205-99-2	3.1E-01	3.9E-01	*c*	**0.79**
Benzo(k)fluoranthene	207-08-9	3.1E-02	3.9E-01	*c*	**0.08**
Chrysene	218-01-9	3.1E-03	3.9E-02	*c*	**0.08**
Dibenzo(a,h)anthracene	53-70-3	3.1E+00	4.1E+00	*c*	**0.76**
Fluoranthene	206-44-0	NA	NA		**NA**
Fluorene	86-73-7	NA	NA		**NA**
Naphthalene	91-20-3	NA	1.2E-01		**NA**
Pyrene	129-00-0	NA	NA		**NA**
TPH-GRO	NA	NA	NA		**NA**
TPH-DRO	NA	NA	NA		**NA**
TPH-ORO	NA	NA	NA		**NA**
>C6 - C8 (Aliphatics)	NA	NA	NA		**NA**
>C8 - C10 (Aliphatics)	NA	NA	NA		**NA**
>C10 - C12 (Aliphatics)	NA	NA	NA		**NA**
>C12 - C16 (Aliphatics)	NA	NA	NA		**NA**
>C16 - C21 (Aliphatics)	NA	NA	NA		**NA**
>C21 - C35 (Aliphatics)	NA	NA	NA		**NA**
>C8 - C10 (Aromatics)	NA	NA	NA		**NA**
>C10 - C12 (Aromatics)	NA	NA	NA		**NA**
>C12 - C16 (Aromatics)	NA	NA	NA		**NA**
>C16 - C21 (Aromatics)	NA	NA	NA		**NA**
>C21 - C35 (Aromatics)	NA	NA	NA		**NA**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	NA	NA		**NA**
Tertiary-butyl- alcohol (TBA)	75-65-0	NA	NA		**NA**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	NA	NA		**NA**
Diisopropyl ether (DIPE)	108-20-3	NA	NA		**NA**
Ethanol	64-17-5	NA	NA		**NA**
Methanol	67-56-1	NA	NA		**NA**
Arsenic	7440-38-2	1.5E+01	1.5E+01	*i*	**1.00**
Barium	7440-39-3	NA	NA		**NA**
Cadmium	7440-43-9	6.3E+00	6.3E+00	*i*	**1.00**
Chromium III	7440-47-3	NA	NA		**NA**
Chromium VI	18540-29-9	2.9E+02	4.2E+01	*i*	**6.90**
Lead	7439-92-1	NA	NA		**NA**
Selenium	7782-49-2	NA	NA		**NA**

Notes:

1. NA: Not Available or Not Applicable.

2. Ratio = UST/Agency-Wide.

3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be higher than UST target levels.

4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be lower than UST target levels.

5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.

6. The letters in the table represent following sources for Agency-Wide:

i - USEPA IRIS

p - USEPA PPRTV's

n - USEPA NCEA

c - CALEPA OEHHA

t - TCEQ's TRRP Tier 1 PCL Table

h - HEAST

r - Missing value; value showing is identical to a value available for another route of exposure

m -MDNR/MDHHS Memo, August 12, 2004 and September 13, 2004. COCs -Benzene, Cadmium.

Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy
Table 3 - Dermal Slope Factor (SFd)

Chemicals	CAS #	Dermal Slope Factor, SFd (kg-day/mg)		
		UST	Agency-Wide	Ratio
Benzene	71-43-2	2.9E-02	0.035	**0.83**
Toluene	108-88-3	NA	NA	**NA**
Ethylbenzene	100-41-4	NA	NA	**NA**
Xylenes (mixed)	1330-20-7	NA	NA	**NA**
Ethylene Dibromide (EDB)	106-93-4	8.5E+01	2.0E+00	**42.50**
Ethylene Dichloride (EDC)	107-06-2	9.1E-02	9.1E-02	**1.00**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	3.3E-03	1.8E-03	**1.83**
Acenaphthene	83-32-9	NA	NA	**NA**
Anthracene	120-12-7	NA	NA	**NA**
Benzo(a)anthracene	56-55-3	7.3E-01	7.3E-01	**1.00**
Benzo(a)pyrene	50-32-8	7.3E+00	7.3E+00	**1.00**
Benzo(b)fluoranthene	205-99-2	7.3E-01	7.3E-01	**1.00**
Benzo(k)fluoranthene	207-08-9	7.3E-02	7.3E-02	**1.00**
Chrysene	218-01-9	7.3E-03	7.3E-03	**1.00**
Dibenzo(a,h)anthracene	53-70-3	7.3E+00	7.3E+00	**1.00**
Fluoranthene	206-44-0	NA	NA	**NA**
Fluorene	86-73-7	NA	NA	**NA**
Naphthalene	91-20-3	NA	1.2E-01	**NA**
Pyrene	129-00-0	NA	NA	**NA**
TPH-GRO	NA	NA	NA	**NA**
TPH-DRO	NA	NA	NA	**NA**
TPH-ORO	NA	NA	NA	**NA**
>C6 - C8 (Aliphatics)	NA	NA	NA	**NA**
>C8 - C10 (Aliphatics)	NA	NA	NA	**NA**
>C10 - C12 (Aliphatics)	NA	NA	NA	**NA**
>C12 - C16 (Aliphatics)	NA	NA	NA	**NA**
>C16 - C21 (Aliphatics)	NA	NA	NA	**NA**
>C21 - C35 (Aliphatics)	NA	NA	NA	**NA**
>C8 - C10 (Aromatics)	NA	NA	NA	**NA**
>C10 - C12 (Aromatics)	NA	NA	NA	**NA**
>C12 - C16 (Aromatics)	NA	NA	NA	**NA**
>C16 - C21 (Aromatics)	NA	NA	NA	**NA**
>C21 - C35 (Aromatics)	NA	NA	NA	**NA**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	NA	NA	**NA**
Tertiary-butyl- alcohol (TBA)	75-65-0	NA	NA	**NA**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	NA	NA	**NA**
Diisopropyl ether (DIPE)	108-20-3	NA	NA	**NA**
Ethanol	64-17-5	NA	NA	**NA**
Methanol	67-56-1	NA	NA	**NA**
Arsenic	7440-38-2	1.5E+00	1.5E+00	**1.00**
Barium	7440-39-3	NA	NA	**NA**
Cadmium	7440-43-9	NA	3.8E-01	**NA**
Chromium III	7440-47-3	NA	NA	**NA**
Chromium VI	18540-29-9	NA	4.2E+01	**NA**
Lead	7439-92-1	NA	NA	**NA**
Selenium	7782-49-2	NA	NA	**NA**

Notes:

1. NA: Not Available or Not Applicable.

2. Ratio = UST/Agency-Wide.

3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be higher than UST target levels.

4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be lower than UST target levels.

5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.

6. For Agency-Wide SFd = Sfo/RAFo.

Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy

Table 4 - Oral Reference Dose (RfDo)

Chemicals	CAS #	Oral Reference Dose, RfDo (mg/kg-day)			
		UST	Agency-Wide		Ratio
Benzene	71-43-2	3.0E-03	4.0E-03	*i*	**0.75**
Toluene	108-88-3	2.0E-01	8.0E-02	*i*	**2.50**
Ethylbenzene	100-41-4	1.0E-01	1.0E-01	*i*	**1.00**
Xylenes (mixed)	1330-20-7	2.0E+00	2.0E-01	*i*	**10.00**
Ethylene Dibromide (EDB)	106-93-4	5.7E-05	9.0E-03	*i*	**0.01**
Ethylene Dichloride (EDC)	107-06-2	3.0E-02	2.0E-02	*n*	**1.50**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	8.6E-01	8.6E-01	*r*	**1.00**
Acenaphthene	83-32-9	6.0E-02	6.0E-02	*i*	**1.00**
Anthracene	120-12-7	3.0E-01	3.0E-01	*i*	**1.00**
Benzo(a)anthracene	56-55-3	NA	NA		**NA**
Benzo(a)pyrene	50-32-8	NA	NA		**NA**
Benzo(b)fluoranthene	205-99-2	NA	NA		**NA**
Benzo(k)fluoranthene	207-08-9	NA	NA		**NA**
Chrysene	218-01-9	NA	NA		**NA**
Dibenzo(a,h)anthracene	53-70-3	NA	NA		**NA**
Fluoranthene	206-44-0	4.0E-02	4.0E-02	*i*	**1.00**
Fluorene	86-73-7	4.0E-02	4.0E-02	*i*	**1.00**
Naphthalene	91-20-3	2.0E-02	2.0E-02	*i*	**1.00**
Pyrene	129-00-0	3.0E-02	3.0E-02	*i*	**1.00**
TPH-GRO	NA	NA	NA		**NA**
TPH-DRO	NA	NA	NA		**NA**
TPH-ORO	NA	NA	NA		**NA**
>C6 - C8 (Aliphatics)	NA	5.0E+00	5.0E+00		**1.00**
>C8 - C10 (Aliphatics)	NA	1.0E-01	1.0E-01		**1.00**
>C10 - C12 (Aliphatics)	NA	1.0E-01	1.0E-01		**1.00**
>C12 - C16 (Aliphatics)	NA	1.0E-01	1.0E-01		**1.00**
>C16 - C21 (Aliphatics)	NA	2.0E+00	2.0E+00		**1.00**
>C21 - C35 (Aliphatics)	NA	2.0E+00	2.0E+00		**1.00**
>C8 - C10 (Aromatics)	NA	4.0E-02	4.0E-02		**1.00**
>C10 - C12 (Aromatics)	NA	4.0E-02	4.0E-02		**1.00**
>C12 - C16 (Aromatics)	NA	4.0E-02	4.0E-02		**1.00**
>C16 - C21 (Aromatics)	NA	3.0E-02	3.0E-02		**1.00**
>C21 - C35 (Aromatics)	NA	3.0E-02	3.0E-02		**1.00**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	4.0E-02	4.0E-02	*t*	**1.00**
Tertiary-butyl- alcohol (TBA)	75-65-0	9.0E-02	9.0E-02	*t*	**1.00**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	1.0E-03	1.0E-03	*t*	**1.00**
Diisopropyl ether (DIPE)	108-20-3	1.0E-01	1.0E-01	*t*	**1.00**
Ethanol	64-17-5	3.3E-01	3.3E+01	*t*	**0.01**
Methanol	67-56-1	5.0E-01	5.0E-01	*i*	**1.00**
Arsenic	7440-38-2	3.0E-04	3.0E-04	*i*	**1.00**
Barium	7440-39-3	7.0E-02	2.0E-01	*i*	**0.35**
Cadmium	7440-43-9	5.0E-04	1.0E-03	*m*	**0.50**
Chromium III	7440-47-3	1.5E+00	1.5E+00	*i*	**1.00**
Chromium VI	18540-29-9	3.0E-03	3.0E-03	*i*	**1.00**
Lead	7439-92-1	NA	NA		**NA**
Selenium	7782-49-2	5.0E-03	5.0E-03	*i*	**1.00**

Notes:

1. NA: Not Available or Not Applicable.

2. Ratio = UST/Agency-Wide.

3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be lower than UST target levels.

4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be higher than UST target levels.

5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.

6. The letters in the table represent following sources for Agency-Wide:

i - USEPA IRIS

p - USEPA PPRTV's

n - USEPA NCEA

c - CALEPA OEHHA

t - TCEQ's TRRP Tier 1 PCL Table

h - HEAST

r - Missing value; value showing is identical to a value available for another route of exposure

m -MDNR/MDHHS Memo, August 12, 2004 and September 13, 2004. COCs -Benzene, Cadmium.

Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy

Table 5 - Inhalation Reference Dose (RfDi)

Chemicals	CAS #	Inhalation Reference Dose, RfDi (mg/kg-day)			
		UST	Agency-Wide		Ratio
Benzene	71-43-2	1.7E-03	8.6E-03	*i*	**0.20**
Toluene	108-88-3	1.1E-01	1.4E+00	*i*	**0.08**
Ethylbenzene	100-41-4	2.9E-01	2.9E-01	*i*	**0.99**
Xylenes (mixed)	1330-20-7	2.0E-01	2.9E-02	*i*	**6.90**
Ethylene Dibromide (EDB)	106-93-4	5.7E-05	2.6E-03	*i*	**0.02**
Ethylene Dichloride (EDC)	107-06-2	1.4E-03	1.4E-03	*n*	**1.02**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	8.6E-01	8.6E-01	*i*	**1.00**
Acenaphthene	83-32-9	6.0E-02	6.0E-02	*r*	**1.00**
Anthracene	120-12-7	3.0E-01	3.0E-01	*r*	**1.00**
Benzo(a)anthracene	56-55-3	NA	NA		**NA**
Benzo(a)pyrene	50-32-8	NA	NA		**NA**
Benzo(b)fluoranthene	205-99-2	NA	NA		**NA**
Benzo(k)fluoranthene	207-08-9	NA	NA		**NA**
Chrysene	218-01-9	NA	NA		**NA**
Dibenzo(a,h)anthracene	53-70-3	NA	NA		**NA**
Fluoranthene	206-44-0	4.0E-02	4.0E-02	*r*	**1.00**
Fluorene	86-73-7	4.0E-02	4.0E-02	*r*	**1.00**
Naphthalene	91-20-3	8.6E-04	8.6E-04	*i*	**1.00**
Pyrene	129-00-0	3.0E-02	3.0E-02	*r*	**1.00**
TPH-GRO	NA	NA	NA		**NA**
TPH-DRO	NA	NA	NA		**NA**
TPH-ORO	NA	NA	NA		**NA**
>C6 - C8 (Aliphatics)	NA	1.5E+00	5.3E+00		**0.29**
>C8 - C10 (Aliphatics)	NA	8.6E-02	2.9E-01		**0.30**
>C10 - C12 (Aliphatics)	NA	8.6E-02	2.9E-01		**0.30**
>C12 - C16 (Aliphatics)	NA	8.6E-01	2.9E-01		**3.00**
>C16 - C21 (Aliphatics)	NA	NA	NA		**NA**
>C21 - C35 (Aliphatics)	NA	NA	NA		**NA**
>C8 - C10 (Aromatics)	NA	5.7E-02	5.7E-02		**1.00**
>C10 - C12 (Aromatics)	NA	5.7E-02	5.7E-02		**1.00**
>C12 - C16 (Aromatics)	NA	5.7E-02	5.7E-02		**1.00**
>C16 - C21 (Aromatics)	NA	NA	NA		**NA**
>C21 - C35 (Aromatics)	NA	NA	NA		**NA**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	NA	2.3E-02	*t*	**NA**
Tertiary-butyl- alcohol (TBA)	75-65-0	8.5E-02	8.6E-02	*t*	**0.99**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	8.5E-02	8.6E-02	*t*	**0.99**
Diisopropyl ether (DIPE)	108-20-3	2.9E-01	1.1E-01	*p*	**2.51**
Ethanol	64-17-5	5.4E-01	5.4E-01	*t*	**1.01**
Methanol	67-56-1	7.4E-02	1.1E+00	*c*	**0.06**
Arsenic	7440-38-2	NA	8.6E-06	*c*	**NA**
Barium	7440-39-3	1.4E-04	1.4E-04	*h*	**1.00**
Cadmium	7440-43-9	NA	NA		**NA**
Chromium III	7440-47-3	2.9E-05	2.9E-05	*t*	**0.99**
Chromium VI	18540-29-9	2.2E-06	2.3E-06	*i*	**0.96**
Lead	7439-92-1	NA	NA		**NA**
Selenium	7782-49-2	NA	5.7E-05	*t*	**NA**

Notes:

1. NA: Not Available or Not Applicable.

2. Ratio = UST/Agency-Wide.

3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be lower than UST target levels.

4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be higher than UST target levels.

5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.

6. The letters in the table represent the most currend edition/version of the following sources for Agency-Wide:

i - USEPA IRIS

p - USEPA PPRTV's

n - USEPA NCEA

c - CALEPA OEHHA

t - TCEQ's TRRP Tier 1 PCL Table

h - HEAST

r - Missing value; value showing is identical to a value available for another route of exposure

m -MDNR/MDHHS Memo, August 12, 2004 and September 13, 2004. COCs -Benzene, Cadmium.

Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy
Table 6 - Dermal Reference Dose (RfDd)

Chemicals	CAS #	Dermal Reference Dose, RfDd (mg/kg-day)		
		UST	Agency-Wide	Ratio
Benzene	71-43-2	3.0E-03	4.0E-03	**0.75**
Toluene	108-88-3	2.0E-01	8.0E-02	**2.50**
Ethylbenzene	100-41-4	1.0E-01	1.0E-01	**1.00**
Xylenes (mixed)	1330-20-7	2.0E+00	2.0E-01	**10.00**
Ethylene Dibromide (EDB)	106-93-4	5.7E-05	9.0E-03	**0.01**
Ethylene Dichloride (EDC)	107-06-2	3.0E-02	2.0E-02	**1.50**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	8.6E-01	8.6E-01	**1.00**
Acenaphthene	83-32-9	6.0E-02	6.0E-02	**1.00**
Anthracene	120-12-7	3.0E-01	3.0E-01	**1.00**
Benzo(a)anthracene	56-55-3	NA	NA	**NA**
Benzo(a)pyrene	50-32-8	NA	NA	**NA**
Benzo(b)fluoranthene	205-99-2	NA	NA	**NA**
Benzo(k)fluoranthene	207-08-9	NA	NA	**NA**
Chrysene	218-01-9	NA	NA	**NA**
Dibenzo(a,h)anthracene	53-70-3	NA	NA	**NA**
Fluoranthene	206-44-0	4.0E-02	4.0E-02	**1.00**
Fluorene	86-73-7	4.0E-02	4.0E-02	**1.00**
Naphthalene	91-20-3	2.0E-02	2.0E-02	**1.00**
Pyrene	129-00-0	3.0E-02	3.0E-02	**1.00**
TPH-GRO	NA	NA	NA	**NA**
TPH-DRO	NA	NA	NA	**NA**
TPH-ORO	NA	NA	NA	**NA**
>C6 - C8 (Aliphatics)	NA	5.0E+00	5.0E+00	**1.00**
>C8 - C10 (Aliphatics)	NA	1.0E-01	1.0E-01	**1.00**
>C10 - C12 (Aliphatics)	NA	1.0E-01	1.0E-01	**1.00**
>C12 - C16 (Aliphatics)	NA	1.0E-01	1.0E-01	**1.00**
>C16 - C21 (Aliphatics)	NA	2.0E+00	2.0E+00	**1.00**
>C21 - C35 (Aliphatics)	NA	2.0E+00	2.0E+00	**1.00**
>C8 - C10 (Aromatics)	NA	4.0E-02	4.0E-02	**1.00**
>C10 - C12 (Aromatics)	NA	4.0E-02	4.0E-02	**1.00**
>C12 - C16 (Aromatics)	NA	4.0E-02	4.0E-02	**1.00**
>C16 - C21 (Aromatics)	NA	3.0E-02	3.0E-02	**1.00**
>C21 - C35 (Aromatics)	NA	3.0E-02	3.0E-02	**1.00**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	4.0E-02	4.0E-02	**1.00**
Tertiary-butyl- alcohol (TBA)	75-65-0	9.0E-02	9.0E-02	**1.00**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	1.0E-03	1.0E-03	**1.00**
Diisopropyl ether (DIPE)	108-20-3	1.0E-01	1.0E-01	**1.00**
Ethanol	64-17-5	3.3E-01	3.3E+01	**0.01**
Methanol	67-56-1	5.0E-01	5.0E-01	**1.00**
Arsenic	7440-38-2	3.0E-04	3.0E-04	**1.00**
Barium	7440-39-3	7.0E-02	2.0E-01	**0.35**
Cadmium	7440-43-9	5.0E-04	1.0E-03	**0.50**
Chromium III	7440-47-3	1.5E+00	1.5E+00	**1.00**
Chromium VI	18540-29-9	3.0E-03	3.0E-03	**1.00**
Lead	7439-92-1	NA	NA	**NA**
Selenium	7782-49-2	5.0E-03	5.0E-03	**1.00**

Notes:

1. NA: Not Available or Not Applicable.
2. Ratio = UST/Agency-Wide.
3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be lower than UST target levels.
4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be higher than UST target levels.
5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.
6. For Agency-Wide RfDd = RfDo*RAFo.

Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy
Table 7 - Oral Absorption Factor (RAFo)

Chemicals	CAS #	Oral Absorption Factor, RAFo (-)		
		UST	Agency-Wide	Ratio
Benzene	71-43-2	1	1.0	**1.00**
Toluene	108-88-3	1	1.0	**1.00**
Ethylbenzene	100-41-4	0.92	1.0	**0.92**
Xylenes (mixed)	1330-20-7	0.92	1.0	**0.92**
Ethylene Dibromide (EDB)	106-93-4	1	1.0	**1.00**
Ethylene Dichloride (EDC)	107-06-2	1	1.0	**1.00**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	1	1.0	**1.00**
Acenaphthene	83-32-9	1	1.0	**1.00**
Anthracene	120-12-7	1	1.0	**1.00**
Benzo(a)anthracene	56-55-3	1	1.0	**1.00**
Benzo(a)pyrene	50-32-8	0.85	1.0	**0.85**
Benzo(b)fluoranthene	205-99-2	1	1.0	**1.00**
Benzo(k)fluoranthene	207-08-9	1	1.0	**1.00**
Chrysene	218-01-9	1	1.0	**1.00**
Dibenzo(a,h)anthracene	53-70-3	1	1.0	**1.00**
Fluoranthene	206-44-0	0.5	1.0	**0.50**
Fluorene	86-73-7	1	1.0	**1.00**
Naphthalene	91-20-3	1	1.0	**1.00**
Pyrene	129-00-0	1	1.0	**1.00**
TPH-GRO	NA	NA	NA	**NA**
TPH-DRO	NA	NA	NA	**NA**
TPH-ORO	NA	NA	NA	**NA**
>C6 - C8 (Aliphatics)	NA	1	1.0	**1.00**
>C8 - C10 (Aliphatics)	NA	1	1.0	**1.00**
>C10 - C12 (Aliphatics)	NA	1	1.0	**1.00**
>C12 - C16 (Aliphatics)	NA	1	1.0	**1.00**
>C16 - C21 (Aliphatics)	NA	1	1.0	**1.00**
>C21 - C35 (Aliphatics)	NA	1	1.0	**1.00**
>C8 - C10 (Aromatics)	NA	1	1.0	**1.00**
>C10 - C12 (Aromatics)	NA	1	1.0	**1.00**
>C12 - C16 (Aromatics)	NA	1	1.0	**1.00**
>C16 - C21 (Aromatics)	NA	1	1.0	**1.00**
>C21 - C35 (Aromatics)	NA	1	1.0	**1.00**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	1	1.0	**1.00**
Tertiary-butyl- alcohol (TBA)	75-65-0	1	1.0	**1.00**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	1	1.0	**1.00**
Diisopropyl ether (DIPE)	108-20-3	1	1.0	**1.00**
Ethanol	64-17-5	1	1.0	**1.00**
Methanol	67-56-1	1	1.0	**1.00**
Arsenic	7440-38-2	0.95	1.0	**0.95**
Barium	7440-39-3	1	1.0	**1.00**
Cadmium	7440-43-9	1	1.0	**1.00**
Chromium III	7440-47-3	1	1.0	**1.00**
Chromium VI	18540-29-9	0.025	1.0	**0.03**
Lead	7439-92-1	NA	NA	**NA**
Selenium	7782-49-2	0.8	1.0	**0.80**

Notes:

1. NA: Not Available or Not Applicable.

2. Ratio = UST/Agency-Wide.

3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be higher than UST target levels.

4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be lower than UST target levels.

5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.

6. For Agency-Wide, RAFo values were conservatively taken as 1.

Comparison of Toxicity Values in UST MRBCA and Using Agency-Wide Hierarchy
Table 8 - Dermal Absorption Factor (RAFd)

Chemicals	CAS #	Dermal Absorption Factor, RAFd (-)			
		UST	Agency-Wide		Ratio
Benzene	71-43-2	0.3	NC	RE	**NA**
Toluene	108-88-3	0.03	NC	RE	**NA**
Ethylbenzene	100-41-4	0.3	NC	RE	**NA**
Xylenes (mixed)	1330-20-7	0.3	NC	RE	**NA**
Ethylene Dibromide (EDB)	106-93-4	0.1	NC	RE	**NA**
Ethylene Dichloride (EDC)	107-06-2	0.1	NC	RE	**NA**
Methyl-tert-butyl-ether(MTBE)	1634-04-4	0.3	NC	RE	**NA**
Acenaphthene	83-32-9	0.3	0.13	RE	**2.31**
Anthracene	120-12-7	0.3	0.13	RE	**2.31**
Benzo(a)anthracene	56-55-3	0.13	0.13	RE	**1.00**
Benzo(a)pyrene	50-32-8	0.13	0.13	RE	**1.00**
Benzo(b)fluoranthene	205-99-2	0.13	0.13	RE	**1.00**
Benzo(k)fluoranthene	207-08-9	0.13	0.13	RE	**1.00**
Chrysene	218-01-9	0.13	0.13	RE	**1.00**
Dibenzo(a,h)anthracene	53-70-3	0.13	0.13	RE	**1.00**
Fluoranthene	206-44-0	0.1	0.13	RE	**0.77**
Fluorene	86-73-7	0.3	0.13	RE	**2.31**
Naphthalene	91-20-3	0.3	0.13	RE	**2.31**
Pyrene	129-00-0	0.1	0.13	RE	**0.77**
TPH-GRO	NA	NA	NA		**NA**
TPH-DRO	NA	NA	NA		**NA**
TPH-ORO	NA	NA	NA		**NA**
>C6 - C8 (Aliphatics)	NA	NA	NA		**NA**
>C8 - C10 (Aliphatics)	NA	NA	NA		**NA**
>C10 - C12 (Aliphatics)	NA	0.1	0.1		**1.00**
>C12 - C16 (Aliphatics)	NA	0.1	0.1		**1.00**
>C16 - C21 (Aliphatics)	NA	0.1	0.1		**1.00**
>C21 - C35 (Aliphatics)	NA	0.1	0.1		**1.00**
>C8 - C10 (Aromatics)	NA	NA	0.13		**NA**
>C10 - C12 (Aromatics)	NA	0.1	0.13		**0.77**
>C12 - C16 (Aromatics)	NA	0.1	0.12		**0.83**
>C16 - C21 (Aromatics)	NA	0.13	0.13		**1.00**
>C21 - C35 (Aromatics)	NA	0.13	0.13		**1.00**
Tertiary-amyl-methyl-ether (TAME)	994-05-8	0.13	NC	RE	**NA**
Tertiary-butyl- alcohol (TBA)	75-65-0	0.13	NC	RE	**NA**
Ethyl-tert-butyl-ether (ETBE)	637-92-3	0.13	NC	RE	**NA**
Diisopropyl ether (DIPE)	108-20-3	0.13	NC	RE	**NA**
Ethanol	64-17-5	0.13	NC	RE	**NA**
Methanol	67-56-1	0.1	NC	RE	**NA**
Arsenic	7440-38-2	0.001	0.03	RE	**0.03**
Barium	7440-39-3	0.01	0.01	R3	**1.00**
Cadmium	7440-43-9	0.01	0.001	RE	**10.00**
Chromium III	7440-47-3	0.01	0.01	R3	**1.00**
Chromium VI	18540-29-9	0.01	0.01	R3	**1.00**
Lead	7439-92-1	NA	NA	NA	**NA**
Selenium	7782-49-2	0.1	0.01	R3	**10.00**

Notes:

1. NA: Not Available or Not Applicable.

2. Ratio = UST/Agency-Wide.

3. Ratio >1, UST values higher than Agency-Wide, implies Agency-Wide target levels will be higher than UST target levels.

4. Ratio <1, Agency-Wide values higer than UST values, implies Agency-Wide target levels will be lower than UST target levels.

5. TPH and Carbon fraction properties are taken from TPHCWG handbooks for both UST and Agency-Wide.

6. Dermal Absorption Factor Sources:

7. Adsorption of lead is addressed in Adult Lead Model (US EPA, January 2003) only.

R3 - USEPA Region III (1995)

RE - RAGS Part E, Exibit 3-4