SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 238 (radionuclide) **CAS Number:** 013981-16-3

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.69E-10	(pCi)^-1	HEAST
	Soil: 2.72E-10	(pCi)^-1	HEAST
	Water: 1.31E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	3.4E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	3.2E+4	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	3.2E+4	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.4E+2		
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+3	ml/g	BAES_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	Pu-238	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-07-5
Other:	007440-07-5

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 238 (radionuclide) **CAS Number:** 013981-16-3

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.4E-4	pCi/m3
DW:	3.6E-1	pCi/L
FC:	1.0E+1	pCi/kg
Soil Ing:	2.9E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 239 (radionuclide) **CAS Number:** 015117-48-3

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.74E-10	(pCi)^-1	HEAST
	Soil: 2.76E-10	(pCi)^-1	HEAST
	Water: 1.35E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	3.3E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	8.8E+6	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	8.8E+6	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.4E+2		
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+3	ml/g	BAES_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	Pu-239	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-07-5
Other:	007440-07-5

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 239 (radionuclide) **CAS Number:** 015117-48-3

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.4E-4	pCi/m3
DW:	3.5E-1	pCi/L
FC:	1.0E+1	pCi/kg
Soil Ing:	2.9E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 240 (radionuclide) **CAS Number:** 014119-33-6

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.74E-10	(pCi)^-1	HEAST
	Soil: 2.77E-10	(pCi)^-1	HEAST
	Water: 1.35E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	3.3E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.4E+6	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.4E+6	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value
Metal Contain:	Yes
Organic:	No
Gas:	No
Particulate:	Yes
Radionuclide:	Yes
Rad. Element:	No
Molecular Weight:	2.4E+2
Density:	g/mL @ C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+3	ml/g	BAES_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	Pu-240	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-07-5
Other:	007440-07-5

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 240 (radionuclide) **CAS Number:** 014119-33-6

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.4E-4	pCi/m3
DW:	3.5E-1	pCi/L
FC:	1.0E+1	pCi/kg
Soil Ing:	2.9E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 241(+D) (radionuclide) **CAS Number:** 014119-32-5

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 2.28E-12	(pCi)^-1	HEAST
	Soil: 3.29E-12	(pCi)^-1	HEAST
	Water: 1.76E-12	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	3.3E-10	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	5.1E+3	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	5.1E+3	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.4E+2		
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+3	ml/g	BAES_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	Pu-241	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-07-5
Other:	007440-07-5

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 241(+D) (radionuclide) **CAS Number:** 014119-32-5

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.4E-2	pCi/m3
DW:	2.7E+1	pCi/L
FC:	7.7E+2	pCi/kg
Soil Ing:	2.4E+5	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 242 (radionuclide) **CAS Number:** 013982-10-0

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.65E-10	(pCi)^-1	HEAST
	Soil: 2.63E-10	(pCi)^-1	HEAST
	Water: 1.28E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	3.1E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.4E+8	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.4E+8	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.4E+2		
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+3	ml/g	BAES_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	Pu-242	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-07-5
Other:	007440-07-5

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 242 (radionuclide) **CAS Number:** 013982-10-0

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.5E-4	pCi/m3
DW:	3.7E-1	pCi/L
FC:	1.1E+1	pCi/kg
Soil Ing:	3.0E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 243 (radionuclide) **CAS Number:** 015706-37-3

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 6.92E-13	(pCi)^-1	HEAST
	Soil: 1.34E-12	(pCi)^-1	HEAST
	Water: 4.74E-13	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	2.9E-13	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.1E-1	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.1E-1	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.4E+2		
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+3	ml/g	BAES_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	Pu-243	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-07-5
Other:	007440-07-5

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 243 (radionuclide) **CAS Number:** 015706-37-3

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		100
Water Solub:		
Distrib:		4.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	100
Persistence	
River:	0.0700
Lake:	0.0700

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	100
Persistence	
River:	0.0700
Lake:	0.0700
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	100
Salt Tox:	100
Persistence	
River:	0.0700
Lake:	0.0700
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.6E+1	pCi/m3
DW:	1.0E+2	pCi/L
FC:	2.5E+3	pCi/kg
Soil Ing:	5.9E+5	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 244(+D) (radionuclide) **CAS Number:** 014119-34-7

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.80E-10	(pCi)^-1	HEAST
	Soil: 2.94E-10	(pCi)^-1	HEAST
	Water: 1.37E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	2.9E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	3.4E+10	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	3.4E+10	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value
Metal Contain:	Yes
Organic:	No
Gas:	No
Particulate:	Yes
Radionuclide:	Yes
Rad. Element:	No
Molecular Weight:	2.4E+2
Density:	g/mL @ C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+3	ml/g	BAES_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:	7.8E+2		ECOTOX
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	Pu-244	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-07-5
Other:	007440-07-5

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Plutonium 244(+D) (radionuclide) **CAS Number:** 014119-34-7

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.6E-4	pCi/m3
DW:	3.5E-1	pCi/L
FC:	9.8E+0	pCi/kg
Soil Ing:	2.7E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Polychlorinated biphenyls (PCBs) **CAS Number:** 001336-36-3

TOXICITY

Parameter	Value		Unit	Source
Oral RfD:	2.0E-5		mg/kg/day	LIVECHEM
Inhal RfD:			mg/kg/day	
Oral Slope:	2.0E+0		(mg/kg/day)^-1	IRIS
Oral Wt-of-Evid:	B2			
Inhal Slope:	3.5E-1		(mg/kg/day)^-1	IRIS
Inhal Wt-of-Evid:	B2			
Oral ED10:	2.0E-2		mg/kg/day	EPA_ED10
Oral ED10 Wgt:	B2			
Inhal ED10:	2.0E-2		mg/kg/day	EPA_ED10
Inhal ED10 Wgt:	B2			
Oral LD50:	1.9E+3		mg/kg	RTECS
Dermal LD50:			mg/kg	
Gas Inhal LC50:			ppm	
Dust Inhal LC50:			mg/L	
ACUTE				
Fresh CMC:			µg/L	
Salt CMC:			µg/L	
CHRONIC				
Fresh CCC:	1.4E-2	N, aa	µg/L	WATCRIT
Salt CCC:	3.0E-2	N, aa	µg/L	WATCRIT
Fresh Ecol LC50:			µg/L	
Salt Ecol LC50:			µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	6.7E+0		CHEMFATE

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	No		
Organic:	Yes		
Gas:	Yes		
Particulate:	Yes		
Radionuclide:	No		
Rad. Element:	No		
Molecular Weight:			
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	4.9E-4	Torr	LIVECHEM
Henry's Law:	2.6E-3	atm-m3/mol	LIVECHEM
Water Solub:	7.0E-1	mg/L	CHEMFATE
Distrib Coef:	5.9E+5	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	2.6E+4		ECOTOX
Salt BCF:	1.8E+4		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	2.6E+4		ECOTOX
Salt BCF:	1.8E+4		ECOTOX
Log Kow:	6.7E+0		CHEMFATE
Water Solub:	7.0E-1		CHEMFATE
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	mixture	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Polychlorinated biphenyls (PCBs) **CAS Number:** 001336-36-3

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	0.0200
Gas Migration:	11

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		7.0E-1
Distrib:		5.9E+5
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	2.0E-3
	Non Karst:	2.0E-7

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:	2.4E-5	mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	5.0E-4	mg/L
Cancer Risk:	4.3E-5	mg/L
Non Cancer Risk:	7.3E-4	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:	3.2E-1	mg/kg
Non Cancer Risk:	1.6E+0	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:	5.0E-4	mg/L
Cancer Risk:	4.3E-5	mg/L
Non Cancer Risk:	7.3E-4	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:	1.6E-3	mg/kg
Non Cancer Risk:	2.7E-2	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:	1.4E-2 [N, aa]	µg/L
Salt CCC:	3.0E-2 [N, aa]	µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Pyrene
CAS Number: 000129-00-0

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	3.0E-2	mg/kg/day	IRIS
Inhal RfD:		mg/kg/day	
Oral Slope:		(mg/kg/day)^-1	
Oral Wt-of-Evid:			
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:	3.5E+1	µg/L	ECOTOX
Salt Ecol LC50:	8.9E-1	µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:	1.3E+2	days	THOMAS
Photolysis:	2.8E-2	days	CHEMFATE
Biodeg:	1.9E+3	days	FATERATE
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:	4.5E+0	days	THOMAS
Photolysis:	2.8E-2	days	CHEMFATE
Biodeg:	1.9E+3	days	FATERATE
Radio:		days	
Log Kow:	4.9E+0		CHEMFATE

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	Yes	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	2.0E+2	
Density:	1.3E+0	g/mL @ 23.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	4.6E-6	Torr	CHEMFATE
Henry's Law:	1.1E-5	atm-m3/mol	CHEMFATE
Water Solub:	1.4E+0	mg/L	CHEMFATE
Distrib Coef:	9.5E+3	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	8.4E+5		ECOTOX
Salt BCF:	4.4E+3		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	8.4E+5		ECOTOX
Salt BCF:	6.4E+3		ECOTOX
Log Kow:	4.9E+0		CHEMFATE
Water Solub:	1.4E+0		CHEMFATE
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	1.5E+2	C
Boiling Point:	4.0E+2	C
Formula:	C16 H10	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Pyrene
CAS Number: 000129-00-0

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	0.0020
Gas Migration:	6

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		100
Water Solub:		1.4E+0
Distrib:		9.5E+3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	2.0E-1
	Non Karst:	2.0E-5

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	5000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	5000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.1E+0	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:	2.3E+3	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.1E+0	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:	4.1E+1	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radium
CAS Number: 007440-14-4

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:			
Oral Wt-of-Evid:			
Inhal Slope:			
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	No		
Rad. Element:	Yes		
Molecular Weight:	2.3E+2		
Density:	5.0E+0	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+2	ml/g	BAES_KD
Geo Mean Sol:	3.1E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	3.1E+5	mg/L	CALC

OTHER DATA

Melting Point:	7.0E+2	C
Boiling Point:	1.7E+3	C
Formula:	Ra	

CLASS INFORMATION

Class	Parent Substance

Date: 1/28/2004
Chemical: Radium **CAS Number:** 007440-14-4

HRS factor values are assigned to radioactive isotopes but not to radioactive elements. Data for a radioactive element is used to derive factor values for that element's isotopes.

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radium 226(+D) (radionuclide) **CAS Number:** 013982-63-3

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 5.15E-10	(pCi)^-1	HEAST
	Soil: 7.30E-10	(pCi)^-1	HEAST
	Water: 3.86E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	1.2E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	5.8E+5	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	5.8E+5	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.3E+2		
Density:	5.5E+0	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+2	ml/g	BAES_KD
Geo Mean Sol:	3.1E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	3.1E+5	mg/L	CALC

OTHER DATA

Melting Point:	7.0E+2	C
Boiling Point:	1.7E+3	C
Formula:	Ra-226(+D)	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-14-4
Other:	007440-14-4

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radium 226(+D) (radionuclide) **CAS Number:** 013982-63-3

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+2
Geo Mean Sol:		3.1E+5
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	5.0E+0	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	4.1E-4	pCi/m3
DW:	1.2E-1	pCi/L
FC:	3.4E+0	pCi/kg
Soil Ing:	1.1E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radium 228(+D) (radionuclide) **CAS Number:** 015262-20-1

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.43E-09	(pCi)^-1	HEAST
	Soil: 2.28E-09	(pCi)^-1	HEAST
	Water: 1.04E-09	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	5.2E-9	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.9E+3	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.9E+3	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.3E+2		
Density:	5.5E+0	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	4.5E+2	ml/g	BAES_KD
Geo Mean Sol:	3.1E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	3.1E+5	mg/L	CALC

OTHER DATA

Melting Point:	7.0E+2	C
Boiling Point:	1.7E+3	C
Formula:	Ra-228(+D)	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-14-4
Other:	007440-14-4

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radium 228(+D) (radionuclide) **CAS Number:** 015262-20-1

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		4.5E+2
Geo Mean Sol:		3.1E+5
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	5.0E+0	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	9.1E-4	pCi/m3
DW:	4.6E-2	pCi/L
FC:	1.2E+0	pCi/kg
Soil Ing:	3.5E+2	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radon
CAS Number: 010043-92-2

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:			
Oral Wt-of-Evid:			
Inhal Slope:			
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	1.5E+0		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	No		
Organic:	No		
Gas:	Yes		
Particulate:	No		
Radionuclide:	No		
Rad. Element:	Yes		
Molecular Weight:	2.2E+2		
Density:	9.1E+0	g/L	@

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	7.6E+2	Torr	LIVECHEM
Henry's Law:		atm-m3/mol	
Water Solub:	2.2E+3	mg/L	LIVECHEM
Distrib Coef:	9.9E+0	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	1.5E+0		PHYSPROP
Water Solub:	2.2E+3		LIVECHEM
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-7.1E+1	C
Boiling Point:	-6.2E+1	C
Formula:	Rn	

CLASS INFORMATION

Class	Parent Substance

HRS factor values are assigned to radioactive isotopes but not to radioactive elements. Data for a radioactive element is used to derive factor values for that element's isotopes.

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radon 222 (+D)(radionuclide) **CAS Number:** 014859-67-7

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food:	(pCi)^-1	HEAST
	Soil:	(pCi)^-1	HEAST
	Water:	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	7.6E-12	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	3.8E+0	days	ICRP38
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	3.8E+0	days	ICRP38
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	No		
Organic:	No		
Gas:	Yes		
Particulate:	No		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.2E+2		
Density:	9.7E-3	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	7.6E+2	Torr	LIVECHEM
Henry's Law:		atm-m3/mol	
Water Solub:	2.2E+3	mg/L	LIVECHEM
Distrib Coef:	9.9E+0	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:	2.2E+3		LIVECHEM
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-7.1E+1	C
Boiling Point:	-6.2E+1	C
Formula:	Rn-222(+D)	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	010043-92-2

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Radon 222 (+D)(radionuclide) **CAS Number:** 014859-67-7

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	1000
Gas Mobility:	1.0000
Gas Migration:	17

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		1000
Water Solub:		2.2E+3
Distrib:		9.9E+0
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E+0

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	1000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	0.4000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	0.4000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	1000
Salt Tox:	1000
Persistence	
River:	1.0000
Lake:	0.4000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	6.3E-1	pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Selenium
CAS Number: 007782-49-2

TOXICITY

Parameter	Value		Unit	Source
Oral RfD:	5.0E-3		mg/kg/day	IRIS
Inhal RfD:			mg/kg/day	
Oral Slope:			(mg/kg/day)^-1	
Oral Wt-of-Evid:				
Inhal Slope:			(mg/kg/day)^-1	
Inhal Wt-of-Evid:				
Oral ED10:			mg/kg/day	
Oral ED10 Wgt:				
Inhal ED10:			mg/kg/day	
Inhal ED10 Wgt:				
Oral LD50:	4.8E+0		mg/kg	ACGIH
Dermal LD50:	7.8E+1		mg/kg	ACGIH
Gas Inhal LC50:			ppm	
Dust Inhal LC50:	8.3E-1		mg/L	ACGIH
ACUTE				
Fresh CMC:		L, R, T D, bb, dd	µg/L	WATCRIT
Salt CMC:	2.9E+2		µg/L	WATCRIT
CHRONIC				
Fresh CCC:	5.0E+0	T D, bb, dd	µg/L	WATCRIT
Salt CCC:	7.1E+1		µg/L	WATCRIT
Fresh Ecol LC50:	2.6E+2		µg/L	ECOTOX
Salt Ecol LC50:	6.0E+2		µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	2.4E-1		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	Yes	
Organic:	No	
Gas:	No	
Particulate:	Yes	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	7.9E+1	
Density:	4.8E+0	g/mL @ 20.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:	9.7E-3	atm-m3/mol	PHYSPROP
Water Solub:		mg/L	
Distrib Coef:	5.0E+0	ml/g	SSG_KD
Geo Mean Sol:	2.6E+6	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	6.2E+1		ECOTOX
Salt BCF:	9.0E+2		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	3.2E+2		ECOTOX
Salt BCF:	9.0E+2		ECOTOX
Log Kow:	2.4E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	2.6E+6	mg/L	CALC

OTHER DATA

Melting Point:	2.2E+2	C
Boiling Point:	6.9E+2	C
Formula:	Se	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Selenium
CAS Number: 007782-49-2

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		100
Water Solub:		
Distrib:		5.0E+0
Geo Mean Sol:		2.6E+6
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E+0

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	500.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	1000
Salt Tox:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	500.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	5.0E-2	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.8E-1	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:	3.9E+2	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:	5.0E-2	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.8E-1	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:	6.8E+0	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:	L, R, T	µg/L
Salt CMC:	2.9E+2 D, bb, dd	µg/L
CHRONIC		
Fresh CCC:	5.0E+0 T	µg/L
Salt CCC:	7.1E+1 D, bb, dd	µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Silver
CAS Number: 007440-22-4

TOXICITY

Parameter	Value		Unit	Source
Oral RfD:	5.0E-3		mg/kg/day	IRIS
Inhal RfD:			mg/kg/day	
Oral Slope:			(mg/kg/day)^-1	
Oral Wt-of-Evid:				
Inhal Slope:			(mg/kg/day)^-1	
Inhal Wt-of-Evid:				
Oral ED10:			mg/kg/day	
Oral ED10 Wgt:				
Inhal ED10:			mg/kg/day	
Inhal ED10 Wgt:				
Oral LD50:	5.0E+1		mg/kg	ACGIH
Dermal LD50:			mg/kg	
Gas Inhal LC50:			ppm	
Dust Inhal LC50:			mg/L	
ACUTE				
Fresh CMC:	3.2E+0	D, E, G	µg/L	WATCRIT
Salt CMC:	1.9E+0	D, G	µg/L	WATCRIT
CHRONIC				
Fresh CCC:			µg/L	
Salt CCC:			µg/L	
Fresh Ecol LC50:	1.6E+0		µg/L	ECOTOX
Salt Ecol LC50:	1.0E+1		µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	2.3E-1		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	Yes	
Organic:	No	
Gas:	No	
Particulate:	Yes	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	1.1E+2	
Density:	1.1E+1	g/mL @ 20.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	8.3E+0	ml/g	SSG_KD
Geo Mean Sol:	2.5E+2	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	2.8E+1		VER_BCF
Salt BCF:	3.9E+5		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	2.8E+1		VER_BCF
Salt BCF:	3.9E+5		ECOTOX
Log Kow:	2.3E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	2.5E+2	mg/L	CALC

OTHER DATA

Melting Point:	9.6E+2	C
Boiling Point:	2.2E+3	C
Formula:	Ag	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Silver
CAS Number: 007440-22-4

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		100
Water Solub:		
Distrib:		8.3E+0
Geo Mean Sol:		2.5E+2
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E+0

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.8E-1	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:	3.9E+2	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.8E-1	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:	6.8E+0	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:	3.2E+0 [D, E, G]	µg/L
Salt CMC:	1.9E+0 [D, G]	µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Silver 108m(+D) (radionuclide) **CAS Number:** 014391-65-2

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.12E-11	(pCi)^-1	HEAST
	Soil: 1.92E-11	(pCi)^-1	HEAST
	Water: 8.14E-12	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	2.7E-11	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	4.6E+4	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	4.6E+4	days	SSG-Rad
Log Kow:	2.3E-1		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	Yes	
Organic:	No	
Gas:	No	
Particulate:	Yes	
Radionuclide:	Yes	
Rad. Element:	No	
Molecular Weight:	1.1E+2	
Density:	1.0E+1	g/mL @ 20.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	8.3E+0	ml/g	SSG_KD
Geo Mean Sol:	2.5E+2	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	2.8E+1		VER_BCF
Salt BCF:	3.9E+5		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	2.8E+1		VER_BCF
Salt BCF:	3.9E+5		ECOTOX
Log Kow:	2.3E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	2.5E+2	mg/L	CALC

OTHER DATA

Melting Point:	9.6E+2	C
Boiling Point:	2.2E+3	C
Formula:	Ag-108m(+D)	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-22-4
Other:	007440-22-4

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Silver 108m(+D) (radionuclide) **CAS Number:** 014391-65-2

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	1000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		1000
Water Solub:		
Distrib:		8.3E+0
Geo Mean Sol:		2.5E+2
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E+0

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	1000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	1000
Salt Tox:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.8E-1	pCi/m3
DW:	5.8E+0	pCi/L
FC:	1.6E+2	pCi/kg
Soil Ing:	4.1E+4	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Silver 110m (radionuclide) **CAS Number:** 014391-76-5

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.37E-11	(pCi)^-1	HEAST
	Soil: 2.37E-11	(pCi)^-1	HEAST
	Water: 9.88E-12	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	2.8E-11	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	Yes	
Organic:	No	
Gas:	No	
Particulate:	Yes	
Radionuclide:	Yes	
Rad. Element:	No	
Molecular Weight:	1.1E+2	
Density:	1.0E+1	g/mL @ 20.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	8.3E+0	ml/g	SSG_KD
Geo Mean Sol:	2.5E+2	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	2.8E+1		VER_BCF
Salt BCF:	3.9E+5		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	2.8E+1		VER_BCF
Salt BCF:	3.9E+5		ECOTOX
Log Kow:	2.3E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	2.5E+2	mg/L	CALC

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.6E+2	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.6E+2	days	SSG-Rad
Log Kow:	2.3E-1		PHYSPROP

OTHER DATA

Melting Point:	9.6E+2	C
Boiling Point:	2.2E+3	C
Formula:	Ag-110m	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-22-4
Other:	007440-22-4

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Silver 110m (radionuclide) **CAS Number:** 014391-76-5

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	1000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		1000
Water Solub:		
Distrib:		8.3E+0
Geo Mean Sol:		2.5E+2
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E+0

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	1000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	1000
Salt Tox:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	9.0E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.7E-1	pCi/m3
DW:	4.8E+0	pCi/L
FC:	1.3E+2	pCi/kg
Soil Ing:	3.4E+4	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Strontium
CAS Number: 007440-24-6

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:			
Oral Wt-of-Evid:			
Inhal Slope:			
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	2.3E-1		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	No		
Rad. Element:	Yes		
Molecular Weight:	8.8E+1		
Density:	2.6E+0	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	3.5E+1	ml/g	BAES_KD
Geo Mean Sol:	5.8E+2	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	2.3E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	5.8E+2	mg/L	CALC

OTHER DATA

Melting Point:	7.8E+2	C
Boiling Point:	1.4E+3	C
Formula:	Sr	

CLASS INFORMATION

Class	Parent Substance

HRS factor values are assigned to radioactive isotopes but not to radioactive elements. Data for a radioactive element is used to derive factor values for that element's isotopes.

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Strontium 90(+D) (radionuclide) **CAS Number:** 010098-97-2

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 9.53E-11	(pCi)^-1	HEAST
	Soil: 1.44E-10	(pCi)^-1	HEAST
	Water: 7.40E-11	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	1.1E-10	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.1E+4	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.1E+4	days	SSG-Rad
Log Kow:	2.3E-1		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	Yes	
Organic:	No	
Gas:	No	
Particulate:	Yes	
Radionuclide:	Yes	
Rad. Element:	No	
Molecular Weight:	9.0E+2	
Density:		@

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	3.5E+1	ml/g	BAES_KD
Geo Mean Sol:	5.8E+2	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	9.5E+0		ECOTOX
Salt BCF:	1.0E+0		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	9.5E+0		ECOTOX
Salt BCF:	1.0E+0		ECOTOX
Log Kow:	2.3E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	5.8E+2	mg/L	CALC

OTHER DATA

Melting Point:
Boiling Point:
Formula: Sr-90 (+D)

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-24-6
Other:	007440-24-6

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Strontium 90(+D) (radionuclide) **CAS Number:** 010098-97-2

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		3.5E+1
Geo Mean Sol:		5.8E+2
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5.0
Salt:	5.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5.0
Salt:	5.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	8.0E+0	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	4.2E-2	pCi/m3
DW:	6.4E-1	pCi/L
FC:	1.8E+1	pCi/kg
Soil Ing:	5.5E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Styrene
CAS Number: 000100-42-5

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	2.0E-1	mg/kg/day	IRIS
Inhal RfD:	2.9E-1	mg/kg/day	IRIS
Oral Slope:		(mg/kg/day)^-1	
Oral Wt-of-Evid:			
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:	5.0E+3	mg/kg	ACGIH
Dermal LD50:		mg/kg	
Gas Inhal LC50:	2.8E+3	ppm	ACGIH
Dust Inhal LC50:	1.0E+4	mg/L	RTECS
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:	1.8E+3	µg/L	ECOTOX
Salt Ecol LC50:	5.1E+3	µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:	9.0E+1	days	THOMAS
Photolysis:		days	
Biodeg:	2.8E+1	days	FATERATE
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:	9.7E-1	days	THOMAS
Photolysis:		days	
Biodeg:	2.8E+1	days	FATERATE
Radio:		days	
Log Kow:	3.0E+0		CHEMFATE

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	1.0E+2	
Density:	9.1E-1	g/mL @ 20.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	6.1E+0	Torr	CHEMFATE
Henry's Law:	2.7E-3	atm-m3/mol	CHEMFATE
Water Solub:	3.1E+2	mg/L	CHEMFATE
Distrib Coef:	1.2E+2	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	3.0E+0		CHEMFATE
Water Solub:	3.1E+2		CHEMFATE
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-3.1E+1	C
Boiling Point:	1.5E+2	C
Formula:	C8 H8	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Styrene
CAS Number: 000100-42-5

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10
Gas Mobility:	1.0000
Gas Migration:	17

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10
Water Solub:		3.1E+2
Distrib:		1.2E+2
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10
Persistence	
River:	0.4000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10
Persistence	
River:	0.4000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	100
Salt Tox:	100
Persistence	
River:	0.4000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:	1.0E+0	mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	1.0E-1	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	7.3E+0	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:	1.6E+4	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:	1.0E-1	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	7.3E+0	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:	2.7E+2	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Technetium 99 (radionuclide) **CAS Number:** 014133-76-7

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 4.00E-12	(pCi)^-1	HEAST
	Soil: 7.66E-12	(pCi)^-1	HEAST
	Water: 2.75E-12	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	1.4E-11	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	7.7E+7	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	7.7E+7	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	Yes	
Organic:	No	
Gas:	No	
Particulate:	Yes	
Radionuclide:	Yes	
Rad. Element:	No	
Molecular Weight:	9.9E+1	
Density:		@

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	7.0E-3	ml/g	SSG-Rad
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:
Boiling Point:
Formula: Tc-99

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Technetium 99 (radionuclide) **CAS Number:** 014133-76-7

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	1000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		1000
Water Solub:		
Distrib:		7.0E-3
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	
	Non Karst:	

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	1000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	1000
Salt Tox:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	9.0E+2	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	3.4E-1	pCi/m3
DW:	1.7E+1	pCi/L
FC:	4.4E+2	pCi/kg
Soil Ing:	1.0E+5	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorobenzene, 1,2,4,5-
CAS Number: 000095-94-3

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	3.0E-4	mg/kg/day	IRIS
Inhal RfD:		mg/kg/day	
Oral Slope:		(mg/kg/day)^-1	
Oral Wt-of-Evid:			
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:	8.9E+1	µg/L	ECOTOX
Salt Ecol LC50:	1.2E+2	µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:	3.2E+3	days	CHEMFATE
Volatility:	1.3E+2	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+2	days	FATERATE
Radio:		days	
RIVER - Halflives			
Hydrolysis:	3.2E+3	days	CHEMFATE
Volatility:	1.4E+0	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+2	days	FATERATE
Radio:		days	
Log Kow:	4.8E+0		CHEMFATE

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	Yes	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	2.2E+2	
Density:	1.9E+0	g/mL @ 22.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	5.4E-3	Torr	CHEMFATE
Henry's Law:	2.6E-3	atm-m3/mol	CHEMFATE
Water Solub:	5.9E-1	mg/L	CHEMFATE
Distrib Coef:	1.1E+1	ml/g	SSG_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:	4.1E+3		ECOTOX
Salt BCF:			
Log Kow:	4.8E+0		CHEMFATE
Water Solub:	5.9E-1		CHEMFATE
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	1.4E+2	C
Boiling Point:	2.4E+2	C
Formula:	C6 H2 Cl4	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorobenzene, 1,2,4,5-
CAS Number: 000095-94-3

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	0.2000
Gas Migration:	17

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		5.9E-1
Distrib:		1.1E+1
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	2.0E-3
	Non Karst:	2.0E-5

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5000.0
Salt:	5000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5000.0
Salt:	5000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.1E-2	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:	2.3E+1	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:	1.1E-2	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:	4.1E-1	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorodibenzo-p-dioxin **CAS Number:** 041903-57-5

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:		(mg/kg/day)^-1	
Oral Wt-of-Evid:			
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	6.9E+0		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value
Metal Contain:	No
Organic:	Yes
Gas:	No
Particulate:	Yes
Radionuclide:	No
Rad. Element:	No
Molecular Weight:	3.2E+2
Density:	@

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	5.9E-11	Torr	PHYSPROP
Henry's Law:	7.0E-8	atm-m3/mol	PHYSPROP
Water Solub:	3.5E-4	mg/L	PHYSPROP
Distrib Coef:	9.6E+5	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	6.9E+0		PHYSPROP
Water Solub:	3.5E-4		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:
Boiling Point:
Formula: C12H4Cl4O2

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorodibenzo-p-dioxin **CAS Number:** 041903-57-5

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	0
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		0
Water Solub:		3.5E-4
Distrib:		9.6E+5
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	2.0E-5
	Non Karst:	2.0E-9

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	0

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	0
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	0
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	0
Salt Tox:	0
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorodibenzo-p-dioxin 2,3,7,8- (TCDD) **CAS Number:** 001746-01-6

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	1.5E+5	(mg/kg/day)^-1	HEAST
Oral Wt-of-Evid:	B2		
Inhal Slope:	1.5E+5	(mg/kg/day)^-1	HEAST
Inhal Wt-of-Evid:	B2		
Oral ED10:	1.5E-6	mg/kg/day	EPA_ED10
Oral ED10 Wgt:	B2		
Inhal ED10:	1.5E-6	mg/kg/day	EPA_ED10
Inhal ED10 Wgt:	B2		
Oral LD50:	5.0E-1	mg/kg	RTECS
Dermal LD50:	8.0E-2	mg/kg	RTECS
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:	1.6E+2	days	THOMAS
Photolysis:	6.7E-6	days	CHEMFATE
Biodeg:	5.7E+1	days	CHEMFATE
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:	2.3E+0	days	THOMAS
Photolysis:	6.7E-6	days	CHEMFATE
Biodeg:	5.7E+1	days	CHEMFATE
Radio:		days	
Log Kow:	6.6E+0		CHEMFATE

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	No		
Organic:	Yes		
Gas:	Yes		
Particulate:	Yes		
Radionuclide:	No		
Rad. Element:	No		
Molecular Weight:	3.2E+2		
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	1.5E-9	Torr	CHEMFATE
Henry's Law:	7.9E-5	atm-m3/mol	CHEMFATE
Water Solub:	8.0E-6	mg/L	CHEMFATE
Distrib Coef:	5.1E+5	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	2.0E+3		VER_BCF
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:	4.2E+3		VER_BCF
Salt BCF:			
Log Kow:	6.6E+0		CHEMFATE
Water Solub:	8.0E-6		CHEMFATE
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	3.0E+2	C
Boiling Point:		C
Formula:	C12 H4 Cl4 O2	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorodibenzo-p-dioxin 2,3,7,8- (TCDD) **CAS Number:** 001746-01-6

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	0.0002
Gas Migration:	6

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		8.0E-6
Distrib:		5.1E+5
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	2.0E-5
	Non Karst:	2.0E-9

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5000.0
Salt:	5000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	0
Salt Tox:	0
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	5000.0
Salt:	5000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:	5.7E-11	mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	3.0E-8	mg/L
Cancer Risk:	5.7E-10	mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:	4.3E-6	mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:	3.0E-8	mg/L
Cancer Risk:	5.7E-10	mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:	2.1E-8	mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorodibenzofuran 2,3,7,8- **CAS Number:** 051207-31-9

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	1.5E+4	(mg/kg/day)^-1	LIVECHEM
Oral Wt-of-Evid:	B2		
Inhal Slope:	1.5E+4	(mg/kg/day)^-1	LIVECHEM
Inhal Wt-of-Evid:	B2		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:	5.0E-3	mg/kg	RTECS
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:	1.6E+2	days	THOMAS
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:	4.4E+0	days	THOMAS
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	6.5E+0		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	No		
Organic:	Yes		
Gas:	Yes		
Particulate:	Yes		
Radionuclide:	No		
Rad. Element:	No		
Molecular Weight:	3.1E+2		
Density:		g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	1.5E-6	Torr	PHYSPROP
Henry's Law:	1.5E-5	atm-m3/mol	PHYSPROP
Water Solub:	6.9E-4	mg/L	PHYSPROP
Distrib Coef:	4.0E+5	ml/g	DITOR_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	6.5E+0		PHYSPROP
Water Solub:	6.9E-4		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:		C
Boiling Point:		C
Formula:	C12 H4 Cl4 O	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachlorodibenzofuran 2,3,7,8- **CAS Number:** 051207-31-9

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	0.0020
Gas Migration:	6

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		6.9E-4
Distrib:		4.0E+5
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-4
Non Liq.	Karst:	2.0E-5
	Non Karst:	2.0E-9

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	0
Salt Tox:	0
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	50000.0
Salt:	50000.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:	5.7E-10	mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:	5.7E-9	mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:	4.3E-5	mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:	5.7E-9	mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:	2.1E-7	mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachloroethane, 1,1,2,2-
CAS Number: 000079-34-5

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	2.0E-1	(mg/kg/day)^-1	IRIS
Oral Wt-of-Evid:	C		
Inhal Slope:	2.0E-1	(mg/kg/day)^-1	IRIS
Inhal Wt-of-Evid:	C		
Oral ED10:	6.0E-1	mg/kg/day	EPA_ED10
Oral ED10 Wgt:	C		
Inhal ED10:	6.0E-1	mg/kg/day	EPA_ED10
Inhal ED10 Wgt:	C		
Oral LD50:	3.2E+2	mg/kg	ACGIH
Dermal LD50:	6.3E+3	mg/kg	ACGIH
Gas Inhal LC50:	1.0E+3	ppm	ACGIH
Dust Inhal LC50:	3.7E+3	mg/L	RTECS
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:	4.4E+1	days	FATERATE
Volatility:	1.1E+2	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+2	days	FATERATE
Radio:		days	
RIVER - Halflives			
Hydrolysis:	4.4E+1	days	FATERATE
Volatility:	1.3E+0	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+2	days	FATERATE
Radio:		days	
Log Kow:	2.4E+0		CHEMFATE

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	1.7E+2	
Density:	1.6E+0	g/mL @ 20.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	4.6E+0	Torr	CHEMFATE
Henry's Law:	3.4E-4	atm-m3/mol	CHEMFATE
Water Solub:	3.0E+3	mg/L	CHEMFATE
Distrib Coef:	1.9E-1	ml/g	SSG_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	8.0E+0		VER_BCF
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:	8.0E+0		VER_BCF
Salt BCF:			
Log Kow:	2.4E+0		CHEMFATE
Water Solub:	3.0E+3		CHEMFATE
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-4.4E+1	C
Boiling Point:	1.5E+2	C
Formula:	C2 H2 Cl4	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachloroethane, 1,1,2,2-
CAS Number: 000079-34-5

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10
Gas Mobility:	1.0000
Gas Migration:	11

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10
Water Solub:		3.0E+3
Distrib:		1.9E-1
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E+0

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10
Persistence	
River:	0.4000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10
Persistence	
River:	0.4000
Lake:	1.0000
Bioaccumulation	
Fresh:	5.0
Salt:	5.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	0
Salt Tox:	0
Persistence	
River:	0.4000
Lake:	1.0000
Bioaccumulation	
Fresh:	5.0
Salt:	5.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:	4.2E-5	mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:	4.3E-4	mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:	3.2E+0	mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:	4.3E-4	mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:	1.6E-2	mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachloroethylene
CAS Number: 000127-18-4

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	1.0E-2	mg/kg/day	IRIS
Inhal RfD:		mg/kg/day	
Oral Slope:	5.2E-2	(mg/kg/day)^-1	LIVECHEM
Oral Wt-of-Evid:	B2		
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:	3.4E+0	mg/kg/day	EPA_ED10
Oral ED10 Wgt:	B2		
Inhal ED10:	3.4E+0	mg/kg/day	EPA_ED10
Inhal ED10 Wgt:	B2		
Oral LD50:	3.0E+3	mg/kg	ACGIH
Dermal LD50:	3.2E+3	mg/kg	RTECS
Gas Inhal LC50:	4.0E+3	ppm	ACGIH
Dust Inhal LC50:	3.4E+1	mg/L	RTECS
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:	1.1E+2	days	THOMAS
Photolysis:	8.4E+1	days	CHEMFATE
Biodeg:	3.6E+2	days	FATERATE
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:	1.2E+0	days	THOMAS
Photolysis:	8.4E+1	days	CHEMFATE
Biodeg:	3.6E+2	days	FATERATE
Radio:		days	
Log Kow:	3.4E+0		CHEMFATE

PHYSICAL CHARACTERISTICS

Parameter	Value	
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	1.7E+2	
Density:	1.6E+0	g/mL @ 20.00 C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	1.9E+1	Torr	CHEMFATE
Henry's Law:	1.8E-2	atm-m3/mol	CHEMFATE
Water Solub:	2.0E+2	mg/L	CHEMFATE
Distrib Coef:	3.1E-1	ml/g	SSG_KD
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	4.9E+1		VER_BCF
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:	4.9E+1		VER_BCF
Salt BCF:			
Log Kow:	3.4E+0		CHEMFATE
Water Solub:	2.0E+2		CHEMFATE
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-2.2E+1	C
Boiling Point:	1.2E+2	C
Formula:	C2 Cl4	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Tetrachloroethylene
CAS Number: 000127-18-4

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	1.0000
Gas Migration:	17

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		100
Water Solub:		2.0E+2
Distrib:		3.1E-1
Geo Mean Sol:		
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E+0
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E+0

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	100
Persistence	
River:	0.4000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	100
Persistence	
River:	0.4000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	0
Salt Tox:	0
Persistence	
River:	0.4000
Lake:	1.0000
Bioaccumulation	
Fresh:	50.0
Salt:	50.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	5.0E-3	mg/L
Cancer Risk:	1.6E-3	mg/L
Non Cancer Risk:	3.6E-1	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:	1.2E+1	mg/kg
Non Cancer Risk:	7.8E+2	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:	5.0E-3	mg/L
Cancer Risk:	1.6E-3	mg/L
Non Cancer Risk:	3.6E-1	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:	6.1E-2	mg/kg
Non Cancer Risk:	1.4E+1	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thallium
CAS Number: 007440-28-0

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:		(mg/kg/day)^-1	
Oral Wt-of-Evid:			
Inhal Slope:		(mg/kg/day)^-1	
Inhal Wt-of-Evid:			
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:	5.0E+0	mg/kg	ACGIH
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	2.3E-1		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	No		
Rad. Element:	No		
Molecular Weight:	2.0E+2		
Density:	1.2E+1	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	7.1E+1	ml/g	SSG_KD
Geo Mean Sol:	8.6E+3	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	1.3E+2		VER_BCF
Salt BCF:	1.8E+1		VER_BCF
ENVIRONMENTAL			
Fresh BCF:	1.3E+2		VER_BCF
Salt BCF:	1.8E+1		VER_BCF
Log Kow:	2.3E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	8.6E+3	mg/L	CALC

OTHER DATA

Melting Point:	3.0E+2	C
Boiling Point:	1.5E+3	C
Formula:	Tl	

CLASS INFORMATION

Class	Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thallium
CAS Number: 007440-28-0

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		100
Water Solub:		
Distrib:		7.1E+1
Geo Mean Sol:		8.6E+3
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	100
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	50.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	0
Salt Tox:	0
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	50.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	5.0E-4	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:	5.0E-4	mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thallium 204 (radionuclide) **CAS Number:** 013968-51-9

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 8.25E-12	(pCi)^-1	HEAST
	Soil: 1.54E-11	(pCi)^-1	HEAST
	Water: 5.85E-12	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	2.4E-12	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.5E+3	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.5E+3	days	SSG-Rad
Log Kow:	2.3E-1		PHYSPROP

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.0E+2		
Density:	1.2E+1	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	7.1E+1	ml/g	SSG_KD
Geo Mean Sol:	8.6E+3	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	1.3E+2		VER_BCF
Salt BCF:	1.8E+1		VER_BCF
ENVIRONMENTAL			
Fresh BCF:	1.3E+2		VER_BCF
Salt BCF:	1.8E+1		VER_BCF
Log Kow:	2.3E-1		PHYSPROP
Water Solub:			
Geo Mean Sol:	8.6E+3	mg/L	CALC

OTHER DATA

Melting Point:	3.0E+2	C
Boiling Point:	1.5E+3	C
Formula:	Tl-204	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-28-0
Other:	007440-28-0

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thallium 204 (radionuclide) **CAS Number:** 013968-51-9

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	1000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		1000
Water Solub:		
Distrib:		7.1E+1
Geo Mean Sol:		8.6E+3
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	1000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	50.0

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	1000
Salt Tox:	1000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	500.0
Salt:	50.0

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	3.0E+2	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.9E+0	pCi/m3
DW:	8.1E+0	pCi/L
FC:	2.1E+2	pCi/kg
Soil Ing:	5.2E+4	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 227 (radionuclide) **CAS Number:** 015623-47-9

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 6.92E-11	(pCi)^-1	HEAST
	Soil: 1.37E-10	(pCi)^-1	HEAST
	Water: 4.74E-11	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	3.5E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.9E+1	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.9E+1	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.3E+2		
Density:	1.2E+1	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	2.0E+1	ml/g	SSG-Rad
Geo Mean Sol:	2.8E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	2.8E+5	mg/L	CALC

OTHER DATA

Melting Point:	1.8E+3	C
Boiling Point:		C
Formula:	Th-227	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-29-1
Other:	007440-29-1

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 227 (radionuclide) **CAS Number:** 015623-47-9

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		2.0E+1
Geo Mean Sol:		2.8E+5
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	0.4000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	0.4000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	0.4000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.4E-4	pCi/m3
DW:	1.0E+0	pCi/L
FC:	2.5E+1	pCi/kg
Soil Ing:	5.8E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 228(+D) (radionuclide) **CAS Number:** 014274-82-9

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 4.22E-10	(pCi)^-1	HEAST
	Soil: 8.09E-10	(pCi)^-1	HEAST
	Water: 3.00E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	1.4E-7	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	7.3E+2	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	7.3E+2	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.3E+2		
Density:	1.2E+1	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	2.0E+1	ml/g	SSG-Rad
Geo Mean Sol:	2.8E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	2.8E+5	mg/L	CALC

OTHER DATA

Melting Point:	1.8E+3	C
Boiling Point:		C
Formula:	Th-228(+D)	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-29-1
Other:	007440-29-1

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 228(+D) (radionuclide) **CAS Number:** 014274-82-9

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		2.0E+1
Geo Mean Sol:		2.8E+5
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	3.3E-5	pCi/m3
DW:	1.6E-1	pCi/L
FC:	4.2E+0	pCi/kg
Soil Ing:	9.8E+2	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 229(+D) (radionuclide) **CAS Number:** 015594-54-4

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 7.16E-10	(pCi)^-1	HEAST
	Soil: 1.29E-09	(pCi)^-1	HEAST
	Water: 5.28E-10	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	2.2E-7	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.7E+6	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.7E+6	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.3E+2		
Density:	1.2E+1	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	2.0E+1	ml/g	SSG-Rad
Geo Mean Sol:	2.8E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	2.8E+5	mg/L	CALC

OTHER DATA

Melting Point:	1.8E+3	C
Boiling Point:		C
Formula:	Th-229(+D)	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-29-1
Other:	007440-29-1

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 229(+D) (radionuclide) **CAS Number:** 015594-54-4

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		2.0E+1
Geo Mean Sol:		2.8E+5
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	2.1E-5	pCi/m3
DW:	9.0E-2	pCi/L
FC:	2.5E+0	pCi/kg
Soil Ing:	6.2E+2	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 230 (radionuclide) **CAS Number:** 014269-63-7

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 1.19E-10	(pCi)^-1	HEAST
	Soil: 2.02E-10	(pCi)^-1	HEAST
	Water: 9.10E-11	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	2.9E-8	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.8E+7	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	2.8E+7	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.3E+2		
Density:	1.2E+1	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	2.0E+1	ml/g	SSG-Rad
Geo Mean Sol:	2.8E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	2.8E+5	mg/L	CALC

OTHER DATA

Melting Point:	1.8E+3	C
Boiling Point:		C
Formula:	Th-230	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-29-1
Other:	007440-29-1

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 230 (radionuclide) **CAS Number:** 014269-63-7

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	10000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		10000
Water Solub:		
Distrib:		2.0E+1
Geo Mean Sol:		2.8E+5
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	10000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	10000
Salt Tox:	10000
Persistence	
River:	1.0000
Lake:	1.0000
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:	1.5E+1	pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	1.7E-4	pCi/m3
DW:	5.2E-1	pCi/L
FC:	1.5E+1	pCi/kg
Soil Ing:	3.9E+3	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 231 (radionuclide) **CAS Number:** 014932-40-2

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:		mg/kg/day	
Inhal RfD:		mg/kg/day	
Oral Slope:	Food: 3.24E-12	(pCi)^-1	HEAST
	Soil: 6.36E-12	(pCi)^-1	HEAST
	Water: 2.21E-12	(pCi)^-1	HEAST
Oral Wt-of-Evid:	A		
Inhal Slope:	1.5E-12	(pCi)^-1	HEAST
Inhal Wt-of-Evid:	A		
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.1E+0	days	SSG-Rad
RIVER - Halflives			
Hydrolysis:		days	
Volatility:		days	
Photolysis:		days	
Biodeg:		days	
Radio:	1.1E+0	days	SSG-Rad
Log Kow:			

PHYSICAL CHARACTERISTICS

Parameter	Value		
Metal Contain:	Yes		
Organic:	No		
Gas:	No		
Particulate:	Yes		
Radionuclide:	Yes		
Rad. Element:	No		
Molecular Weight:	2.3E+2		
Density:	1.2E+1	g/mL @	C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:		Torr	
Henry's Law:		atm-m3/mol	
Water Solub:		mg/L	
Distrib Coef:	2.0E+1	ml/g	SSG-Rad
Geo Mean Sol:	2.8E+5	mg/L	CALC

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:			
Water Solub:			
Geo Mean Sol:	2.8E+5	mg/L	CALC

OTHER DATA

Melting Point:	1.8E+3	C
Boiling Point:		C
Formula:	Th-231	

CLASS INFORMATION

Class	Parent Substance
GW Mob:	007440-29-1
Other:	007440-29-1

SUPERFUND CHEMICAL DATA MATRIX

Date: 1/28/2004
Chemical: Thorium 231 (radionuclide) **CAS Number:** 014932-40-2

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	1000
Gas Mobility:	
Gas Migration:	

GROUND WATER PATHWAY

Parameter		Value
Toxicity:		1000
Water Solub:		
Distrib:		2.0E+1
Geo Mean Sol:		2.8E+5
Mobility:		
Liquid	Karst:	1.0E+0
	Non Karst:	1.0E-2
Non Liq.	Karst:	1.0E+0
	Non Karst:	1.0E-2

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	1000

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	1000
Persistence	
River:	0.4000
Lake:	0.0700

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	1000
Persistence	
River:	0.4000
Lake:	0.0700
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	1000
Salt Tox:	1000
Persistence	
River:	0.4000
Lake:	0.0700
Bioaccumulation	
Fresh:	0.5
Salt:	0.5

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:		mg/m3
Non Cancer Risk:		mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:	3.1E+0	pCi/m3
DW:	2.2E+1	pCi/L
FC:	5.4E+2	pCi/kg
Soil Ing:	1.2E+5	pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:		mg/L
Cancer Risk:		mg/L
Non Cancer Risk:		mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:		mg/kg
Non Cancer Risk:		mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L