

A new approach to assess the degree of contamination and determine sources and risks related to PTEs in an urban environment: the case study of Santiago (Chile).

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Supplementary Material S8. The folder contains the results of Monte Carlo simulation applied to risk assessment for ingestion (only for children) and inhalation (for both children and adults) of soil/dust for the commune of Santiago.

For non-carcinogenic risk:

- the distribution of HQs is reported for each element, pathway, and receptor as frequency histograms.
- the distribution of HIs is reported for each target organs/system.

For carcinogenic risk:

- the distribution of ILCRs is reported for each element, pathway, and receptor as frequency histograms.

Summaries of univariate statistics for HQs and ILCRs distribution are reported as tables.

HQs INGESTION CHILDREN

HQ ing Child

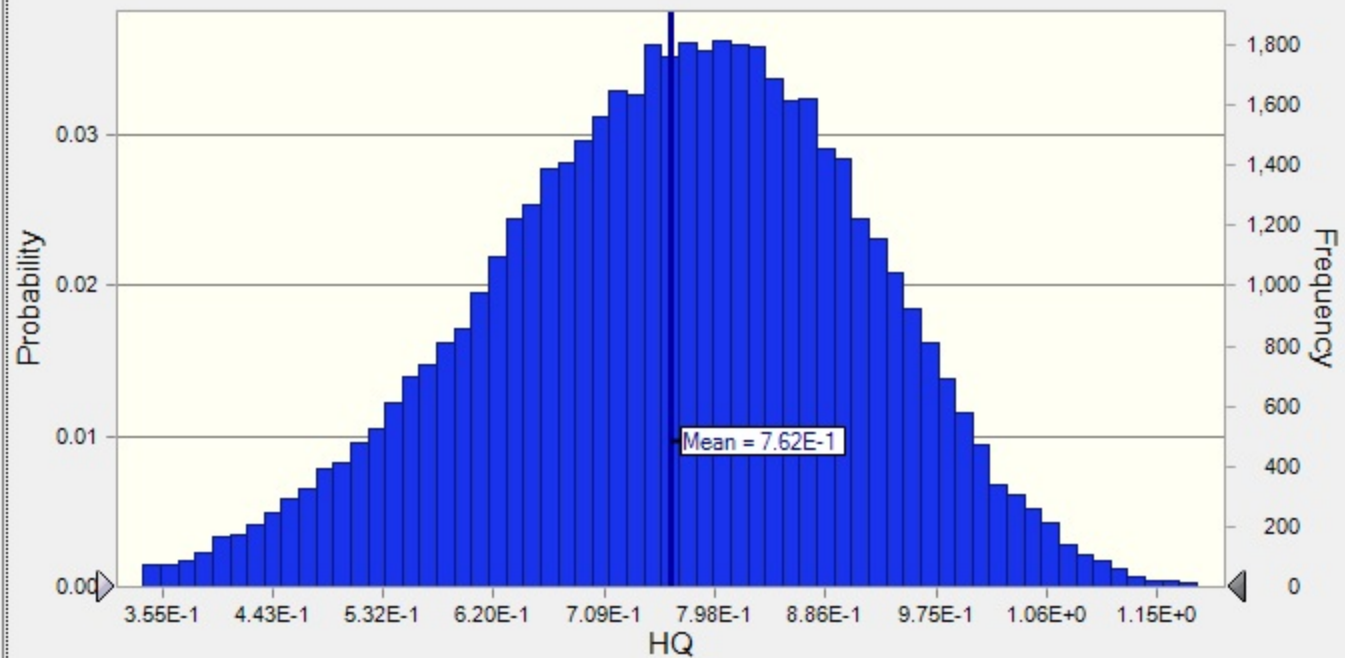
Element	As	Be	Cd	Co	Cr _{Tot}	Cu	Hg	Mo	Ni	Pb	Sb	Sn	V	Zn
Level of certainty	99.994%	0.000%	0.000%	98.864%	2.443%	1.301%	0.001%	0.000%	0.000%	51.184%	3.881%	0.000%	100%	0.000%
Mean	7.62E-01	2.20E-03	4.80E-03	4.65E-01	9.74E-02	5.61E-02	1.82E-02	6.30E-03	7.96E-03	3.06E-01	6.23E-02	2.00E-04	9.31E-01	8.90E-03
Median	7.70E-01	2.20E-03	3.90E-03	4.65E-01	8.80E-02	4.41E-02	1.27E-02	5.70E-03	7.55E-03	2.05E-01	4.12E-02	1.30E-04	9.11E-01	7.50E-03
Min	1.52E-01	-1.60E-03	8.00E-04	-2.21E-01	3.65E-02	8.49E-03	2.79E-08	2.50E-03	3.33E-02	2.73E-02	8.03E-03	2.00E-05	3.71E-01	1.30E-03
Max	1.24E+00	5.70E-03	5.01E-02	1.31E+00	6.12E-01	1.70E+00	2.04E-01	3.93E-02	1.00E-05	1.11E+01	3.12E+00	5.28E-03	2.05E+00	5.59E-02
St. Dev.	1.51E-01	9.00E-04	3.20E-03	1.07E-01	3.96E-02	4.24E-02	1.82E-02	2.60E-03	2.48E-03	3.41E-01	7.08E-02	2.20E-04	1.96E-01	5.50E-03

50,000 Trials

Frequency View

49,767 Displayed

As - HQ ing - Child



2.00E-1

Certainty: 99.992

%

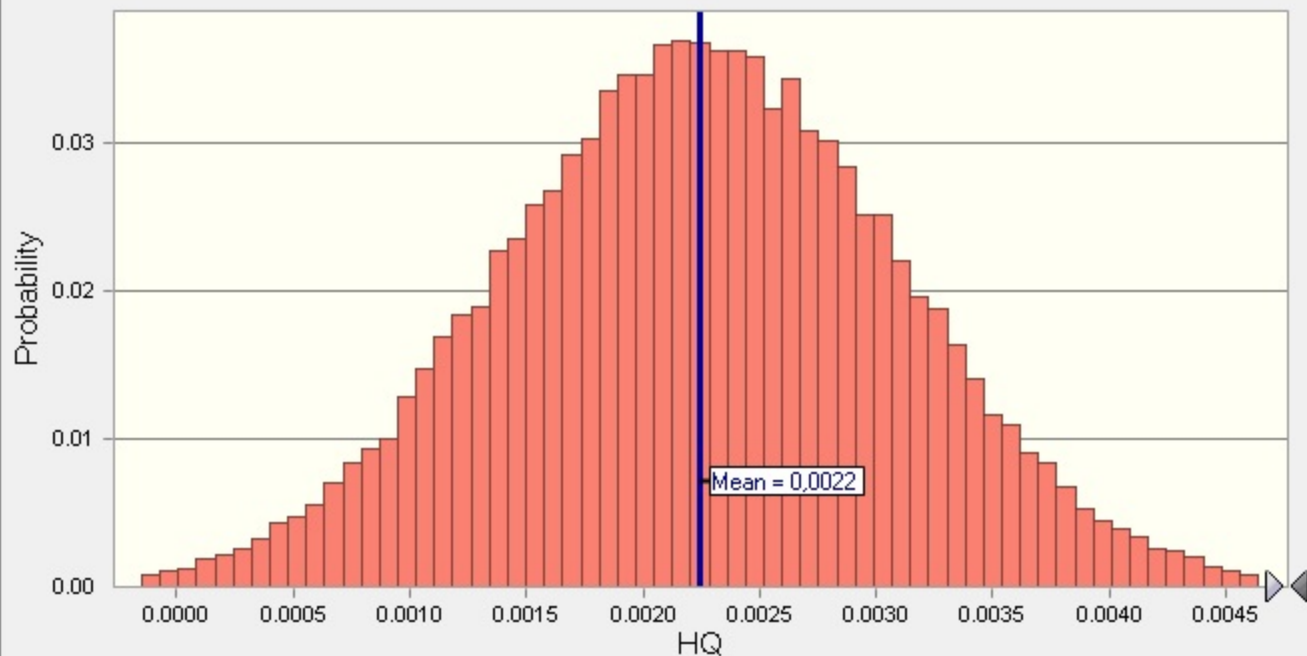
=

50,000 Trials

Frequency View

49,764 Displayed

Be - HQing-nc - Child



0,2000

Certainty:

0,000

%

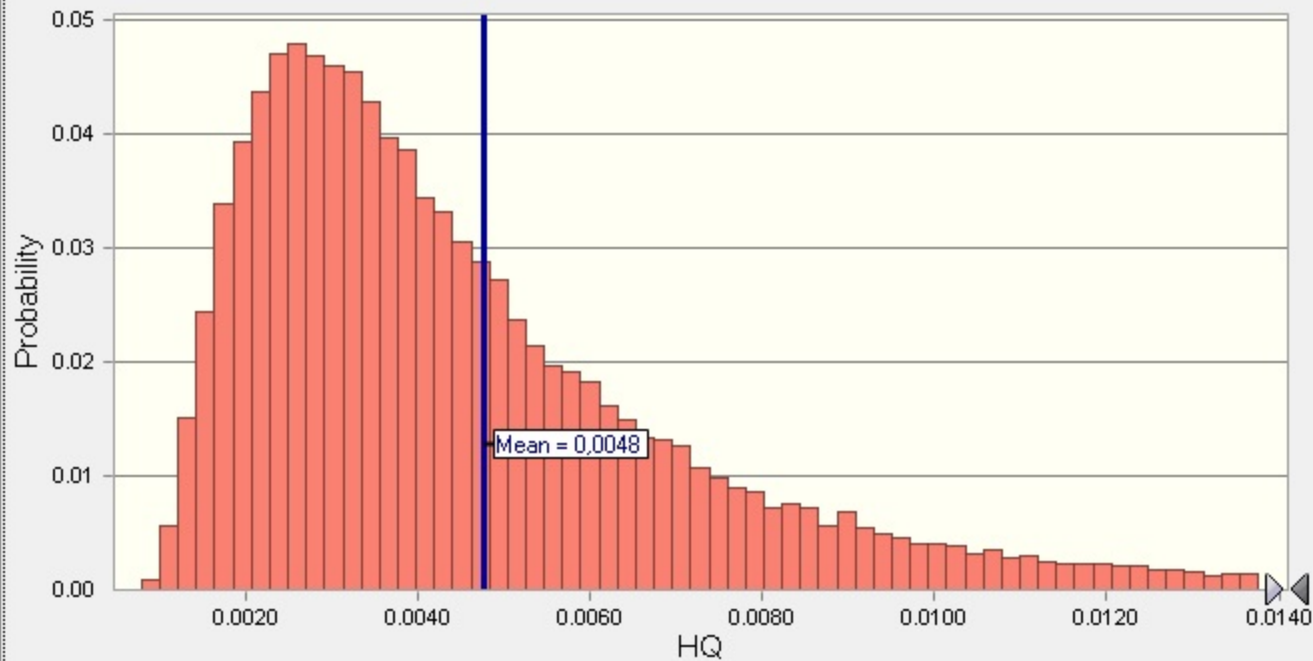
∞

50,000 Trials

Frequency View

48,935 Displayed

Cd - HQing-nc-Child



0,2000

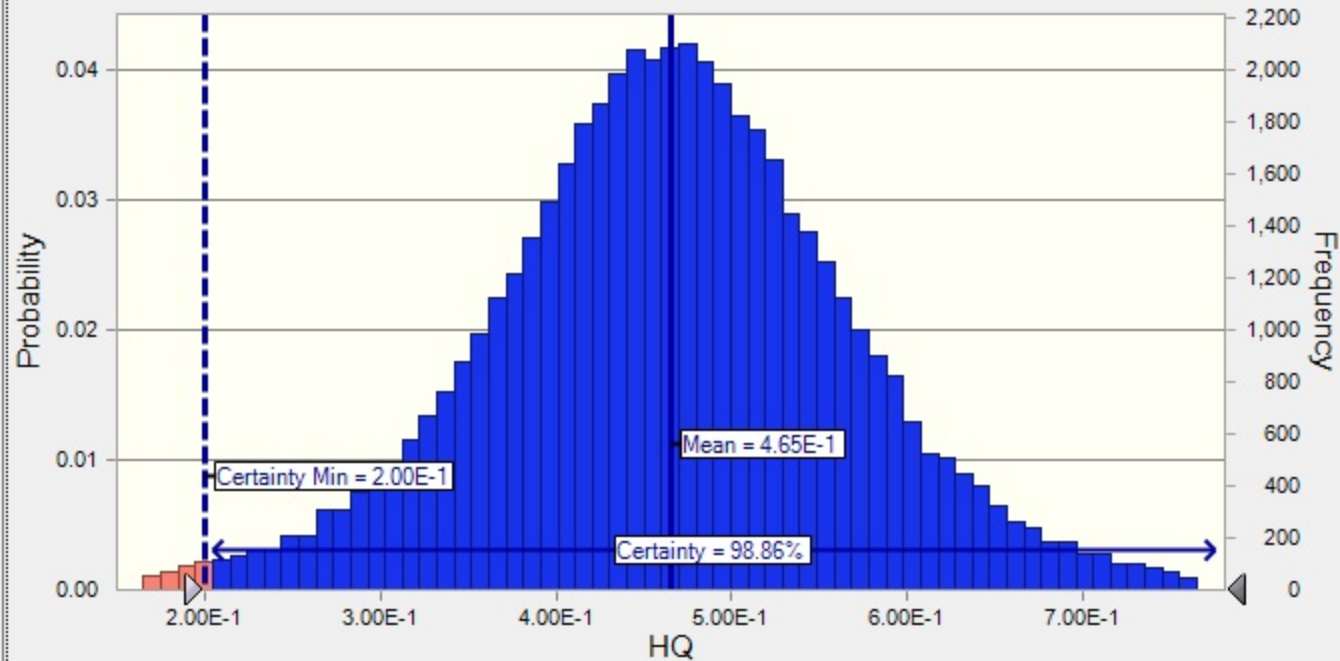
Certainty:

0,000

%

∞

Co - HQ ing - Child



2.00E-1

Certainty: 98.864

%

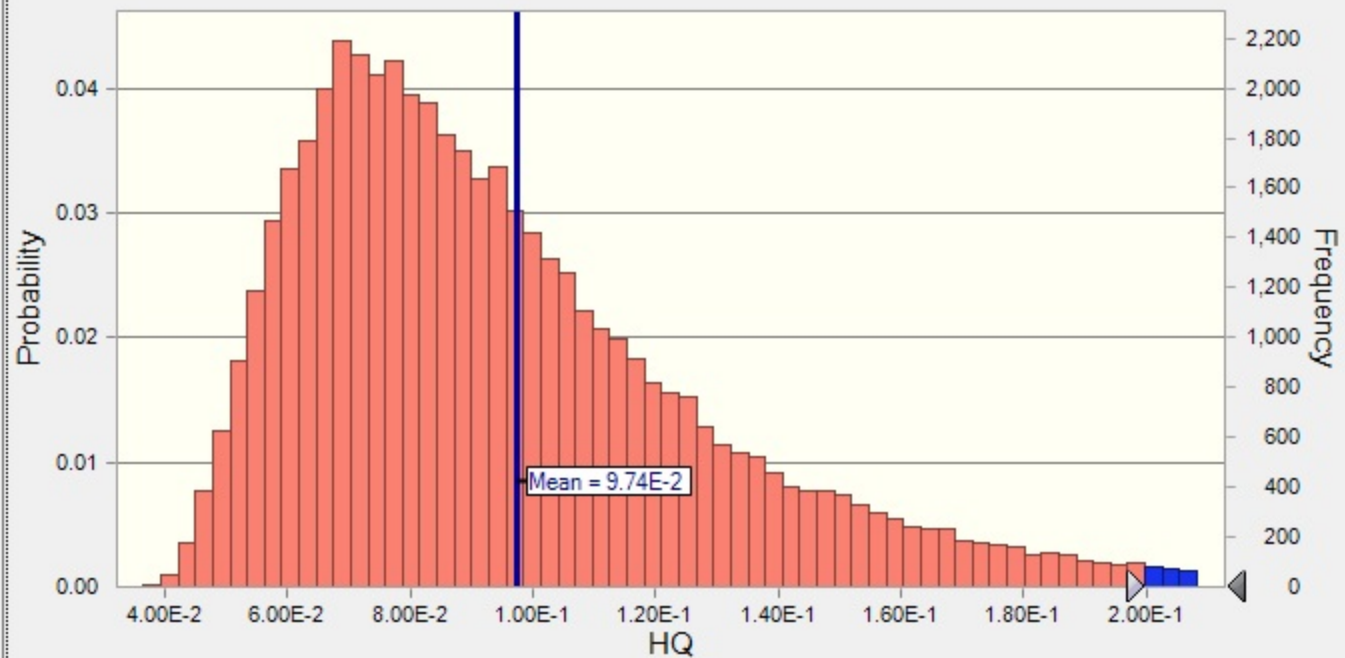
=

50,000 Trials

Frequency View

48,992 Displayed

CrTot - HQ ing - Child



2.00E-1

Certainty: 2.443

%

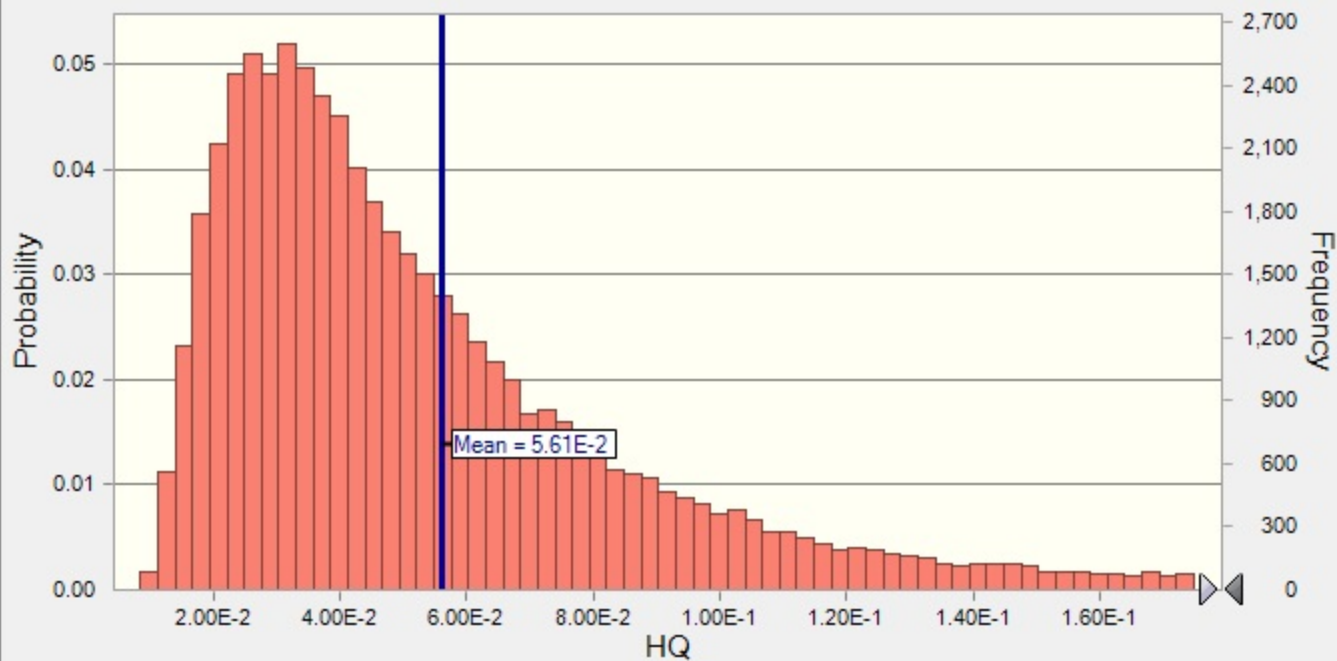
=

50,000 Trials

Frequency View

48,918 Displayed

Cu - HQ ing - Child



2.00E-1

Certainty: 1.301

%

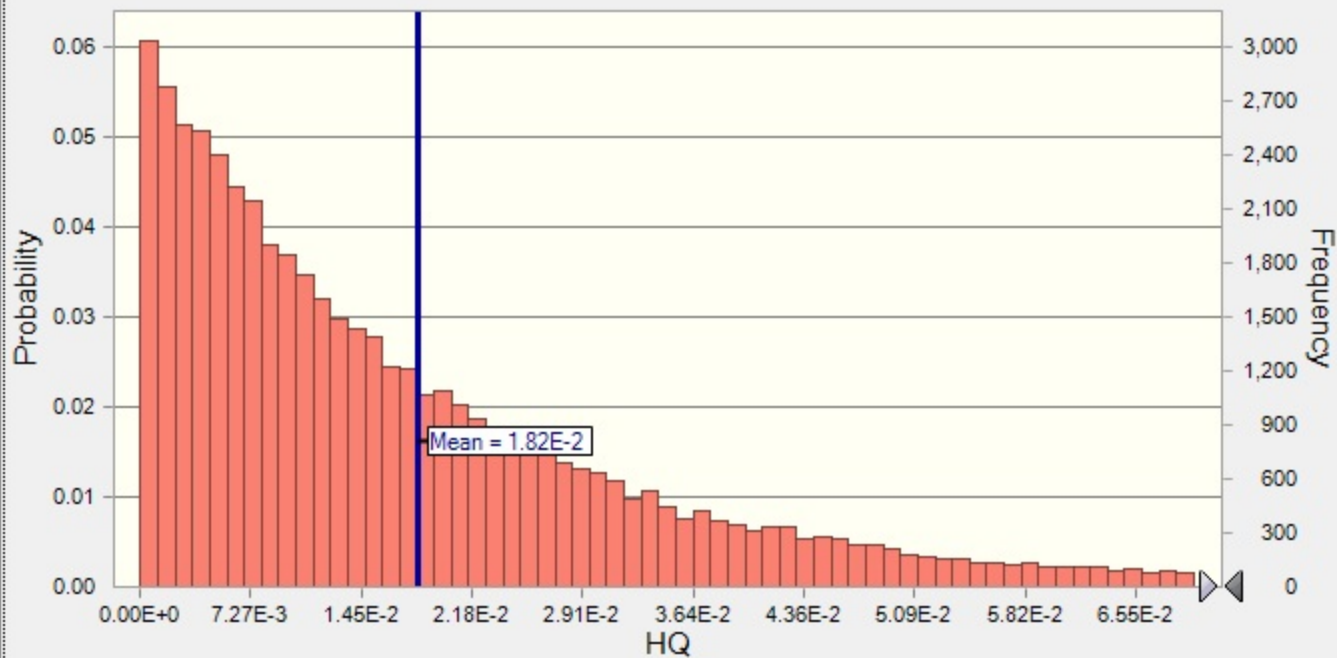
=

50,000 Trials

Frequency View

48,906 Displayed

Hg - HQ ing - Child



2.00E-1

Certainty: 0.001

%

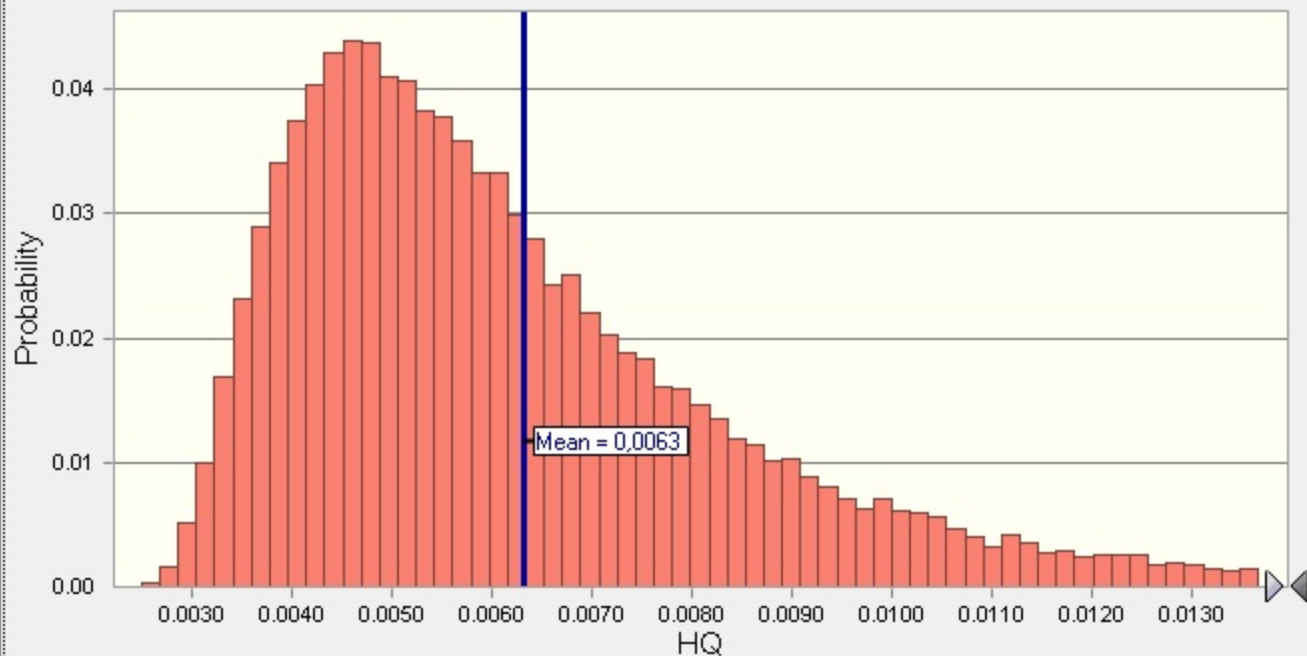
=

50,000 Trials

Frequency View

48,998 Displayed

Mo - HQing-nc - Child



0,2000

Certainty:

0,000

%

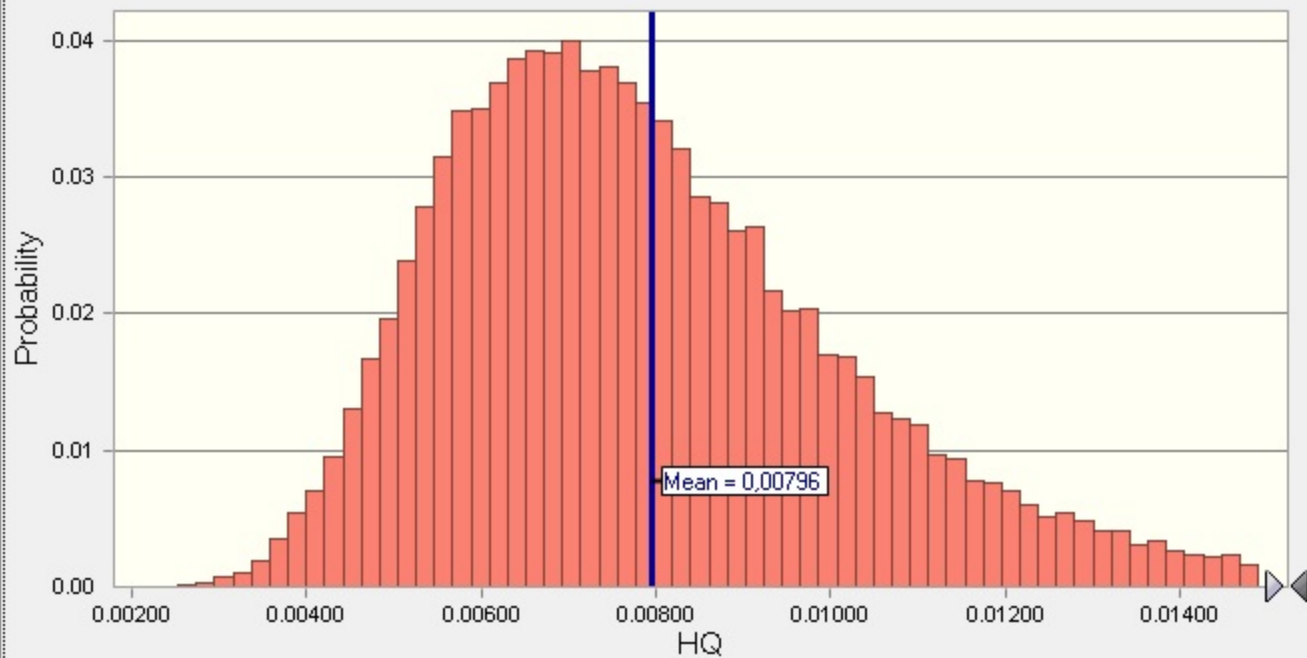
∞

50,000 Trials

Frequency View

49,271 Displayed

Ni - HQing-nc - Child



0,20000

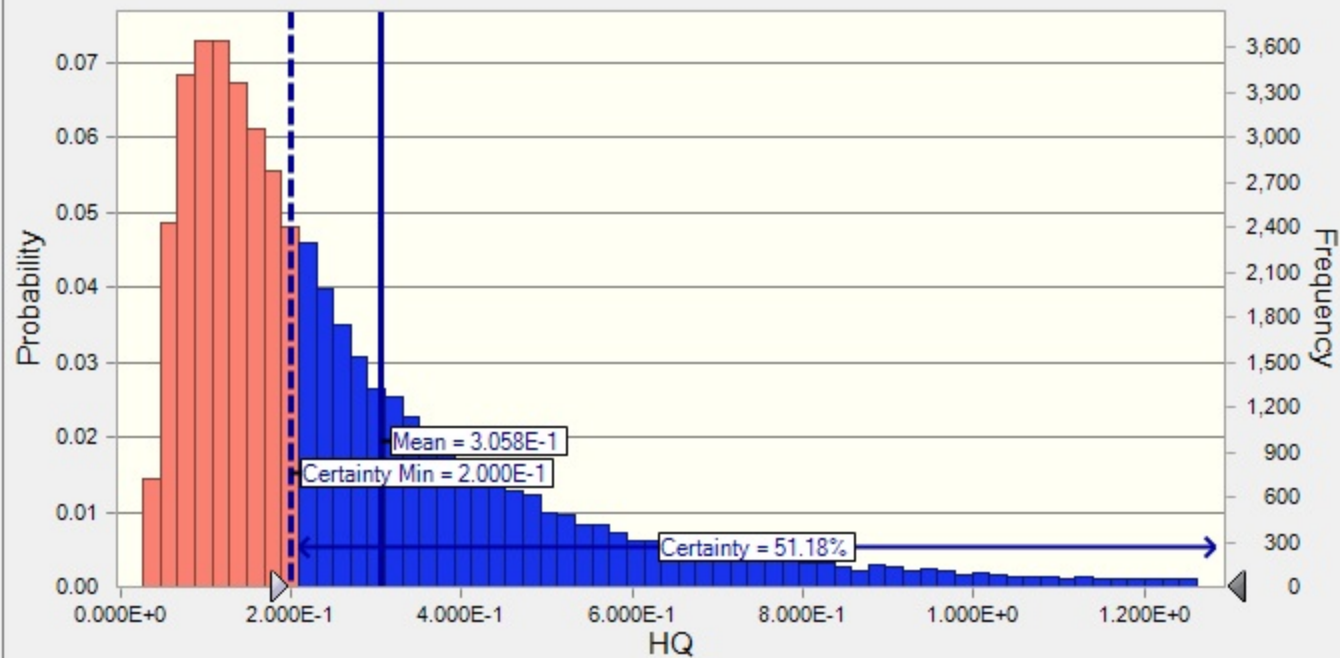
Certainty:

0,000

%

∞

Pb - HQ ing - Child



2.000E-1

Certainty: 51.184

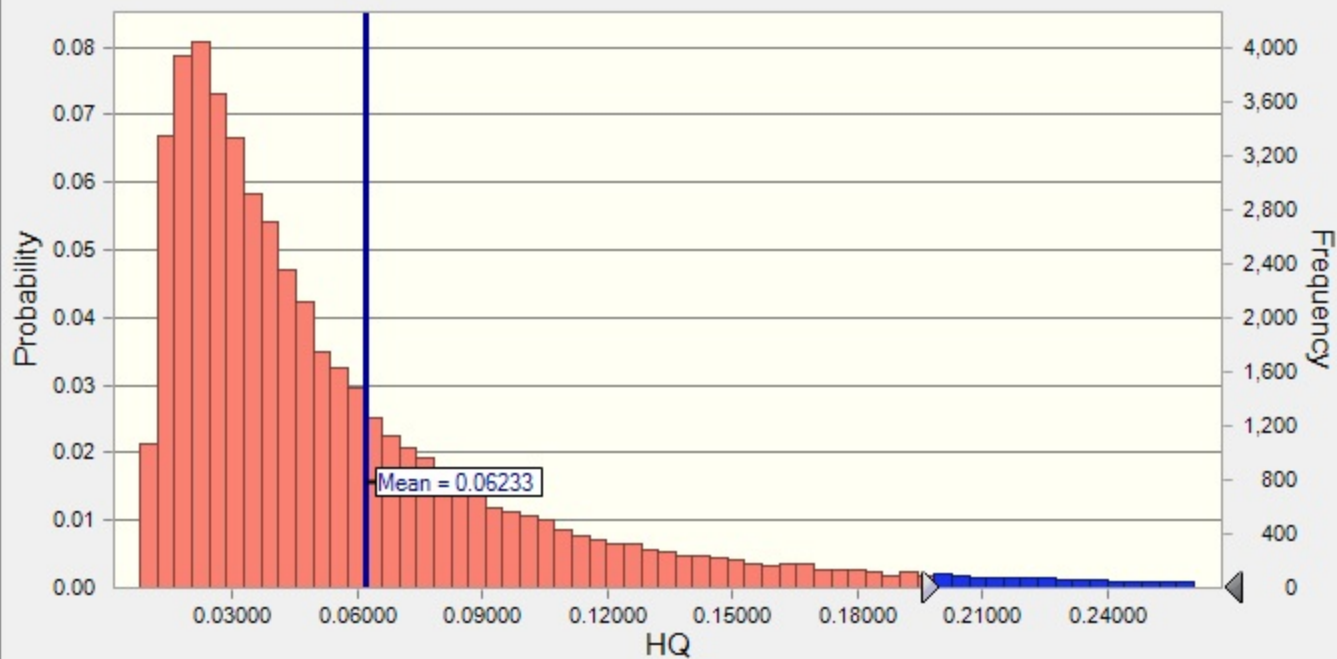
%

=

50,000 Trials

Frequency View

48,977 Displayed

Sb - HQ ing - Child

0.20000

Certainty: 3.881

%

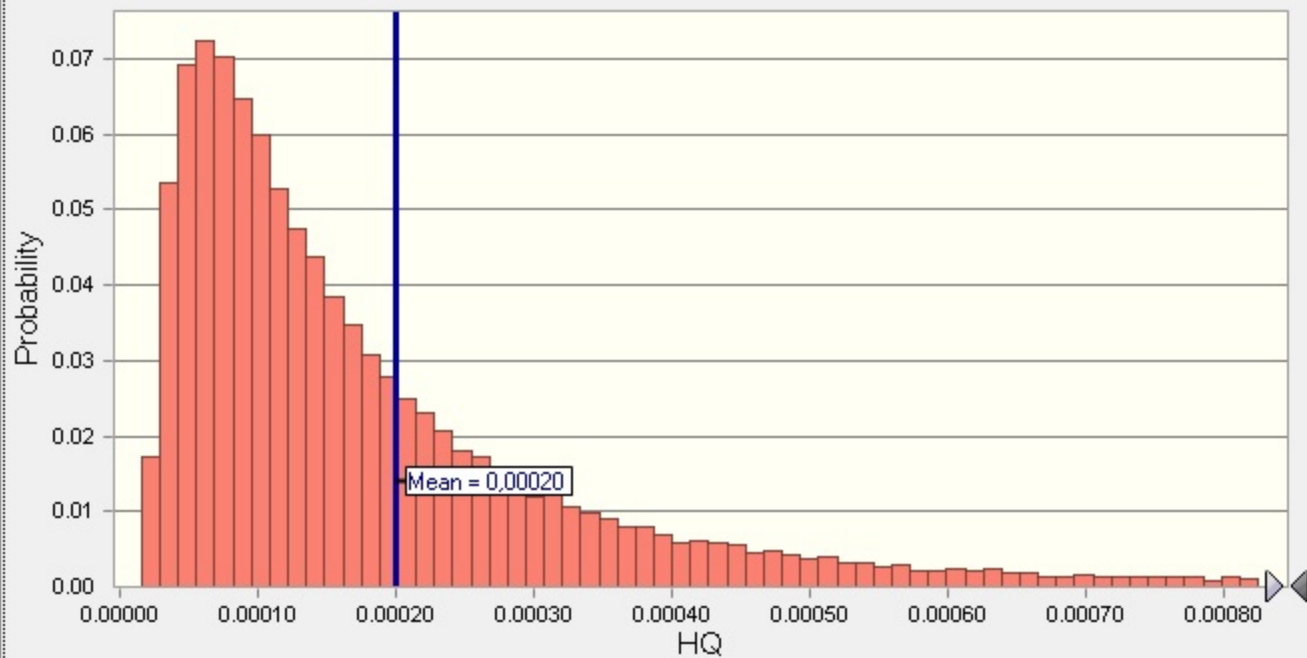
=

50,000 Trials

Frequency View

48,915 Displayed

Sn - HQing-nc - Child



0,20000

Certainty:

0,000

%

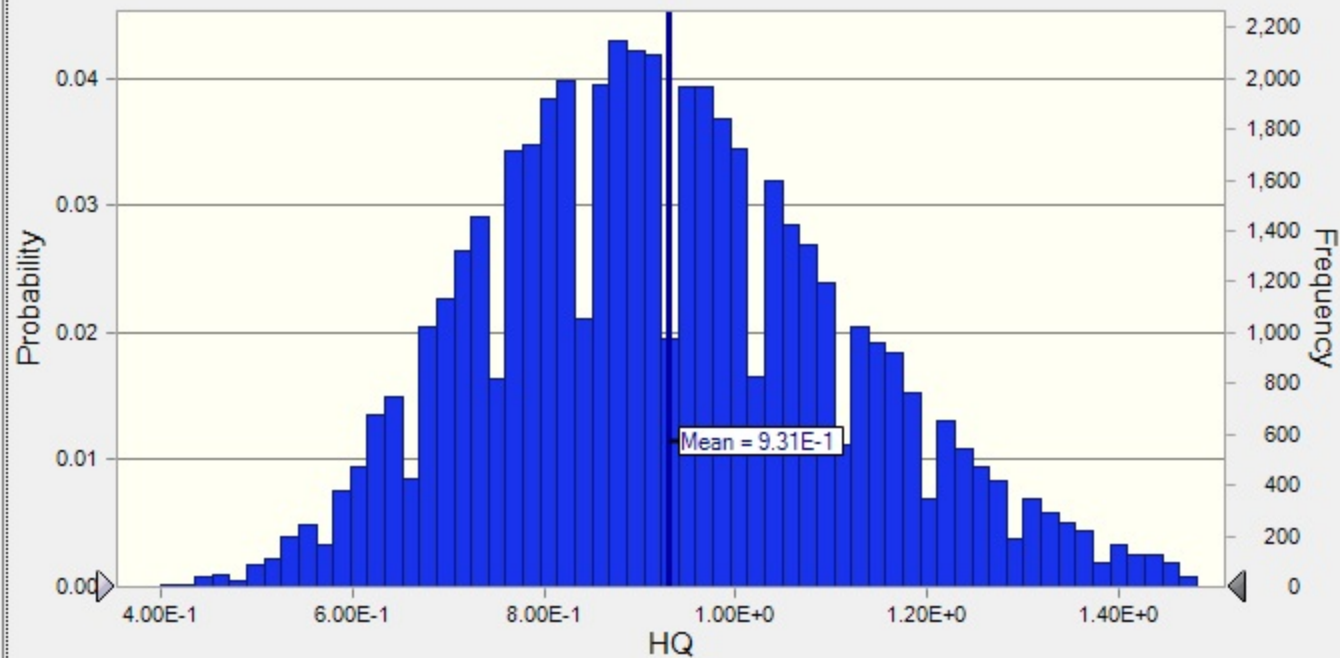
∞

50,000 Trials

Frequency View

49,596 Displayed

V - HQ ing - CHILD



2.00E-1

Certainty: 100.000

%

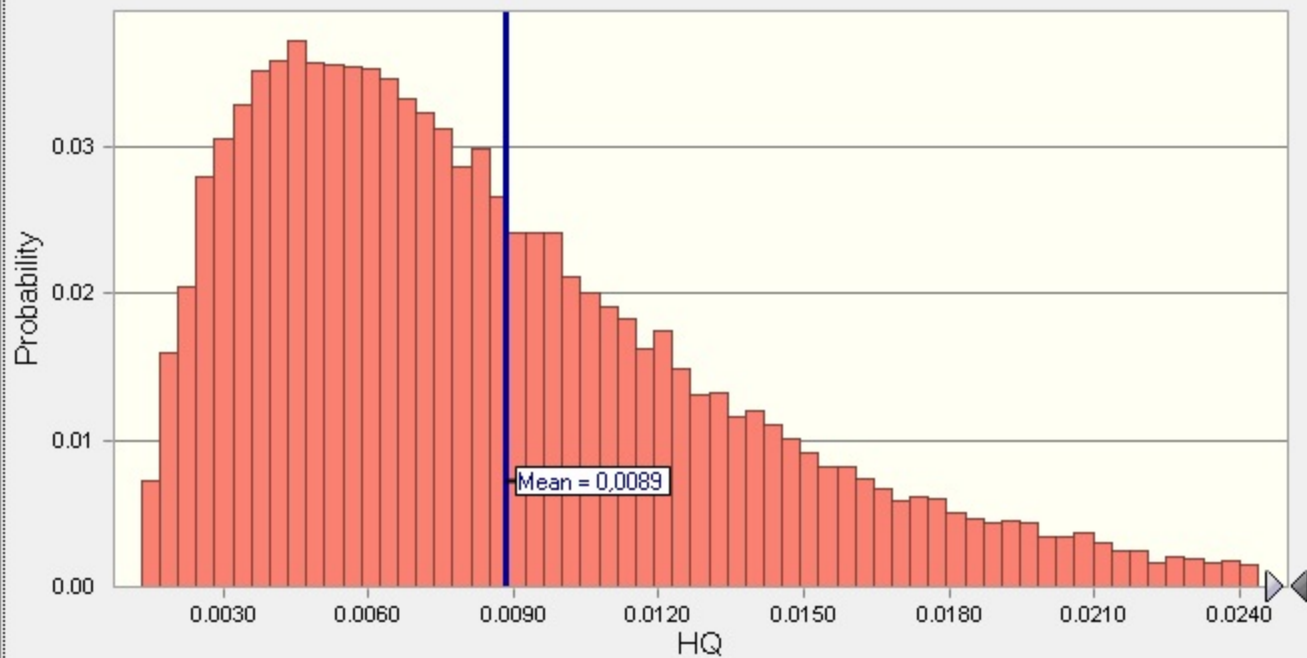
=

50,000 Trials

Frequency View

49,051 Displayed

Zn - HQing-nc - Child



0,2000

Certainty:

0,000

%

∞

HQs INHALATION CHILDREN

HQ inh- Child

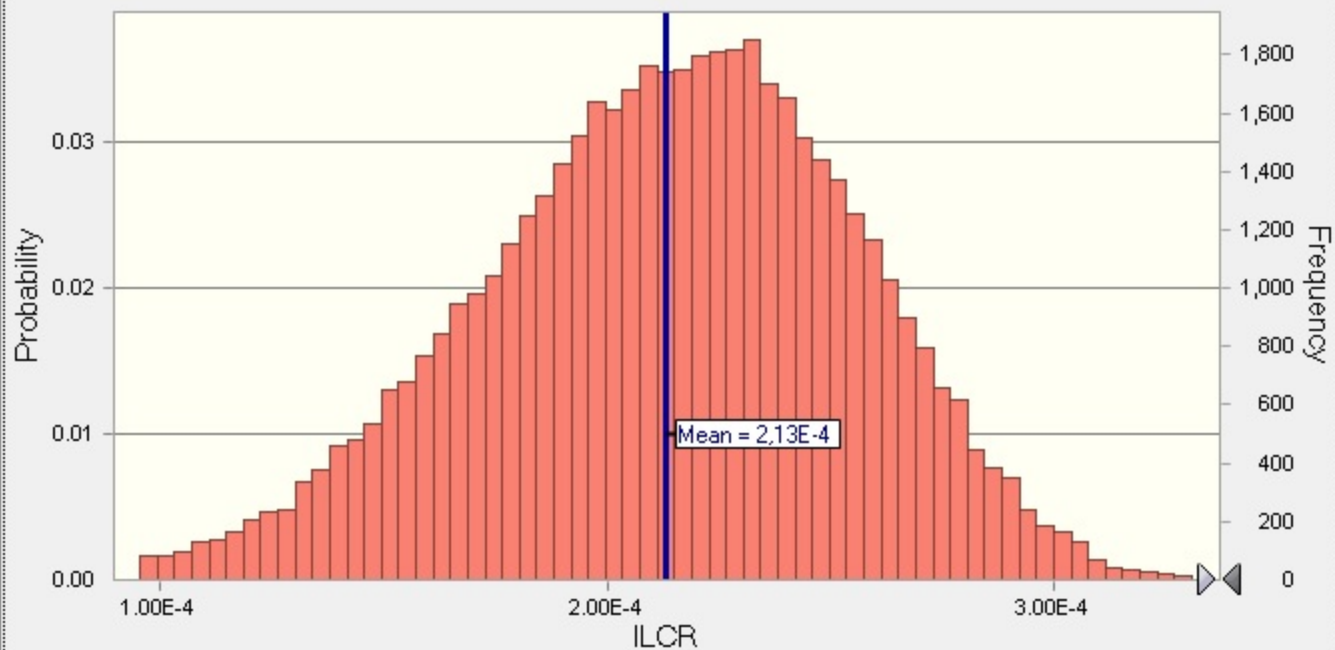
Element	As	Be	Cd	Co	Hg	Mo	Ni	Sb
Level of certainty	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mean	2.13E-04	3.13E-06	6.67E-06	3.25E-04	1.35E-07	1.11E-06	2.48E-05	1.16E-06
Median	2.16E-04	3.13E-06	5.43E-06	3.25E-04	9.28E-08	9.93E-07	2.35E-05	7.55E-07
Min	4.19E-05	-1.94E-06	1.14E-06	-8.79E-05	2.28E-12	4.38E-07	5.56E-06	1.50E-07
Max	3.57E-04	8.55E-06	1.06E-04	7.27E-04	1.67E-06	7.13E-06	7.91E-05	3.72E-05
St. Dev.	4.20E-05	1.20E-06	4.62E-06	7.47E-05	1.35E-07	4.55E-07	7.71E-06	1.33E-06

50,000 Trials

Frequency View

49,796 Displayed

ILCR As Child



2,00E-1

Certainty:

0,000

%

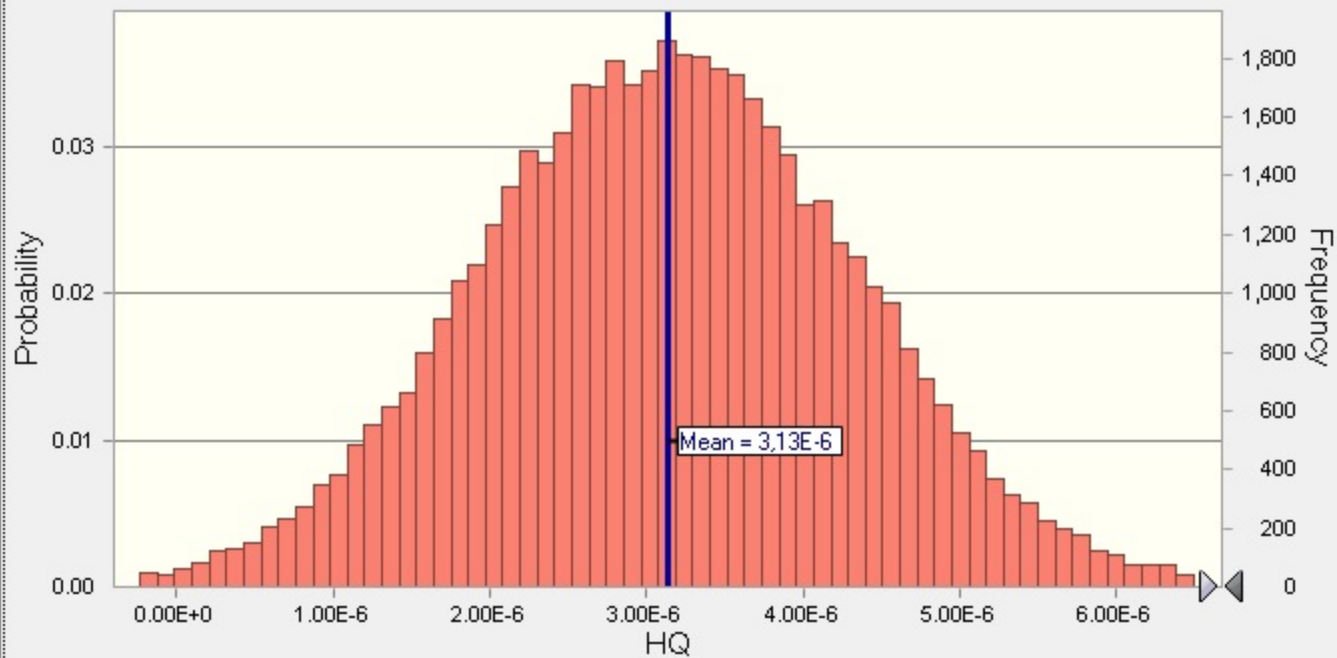
∞

50,000 Trials

Frequency View

49,731 Displayed

HQ Be Child



2,00E-1

Certainty:

0,000

%

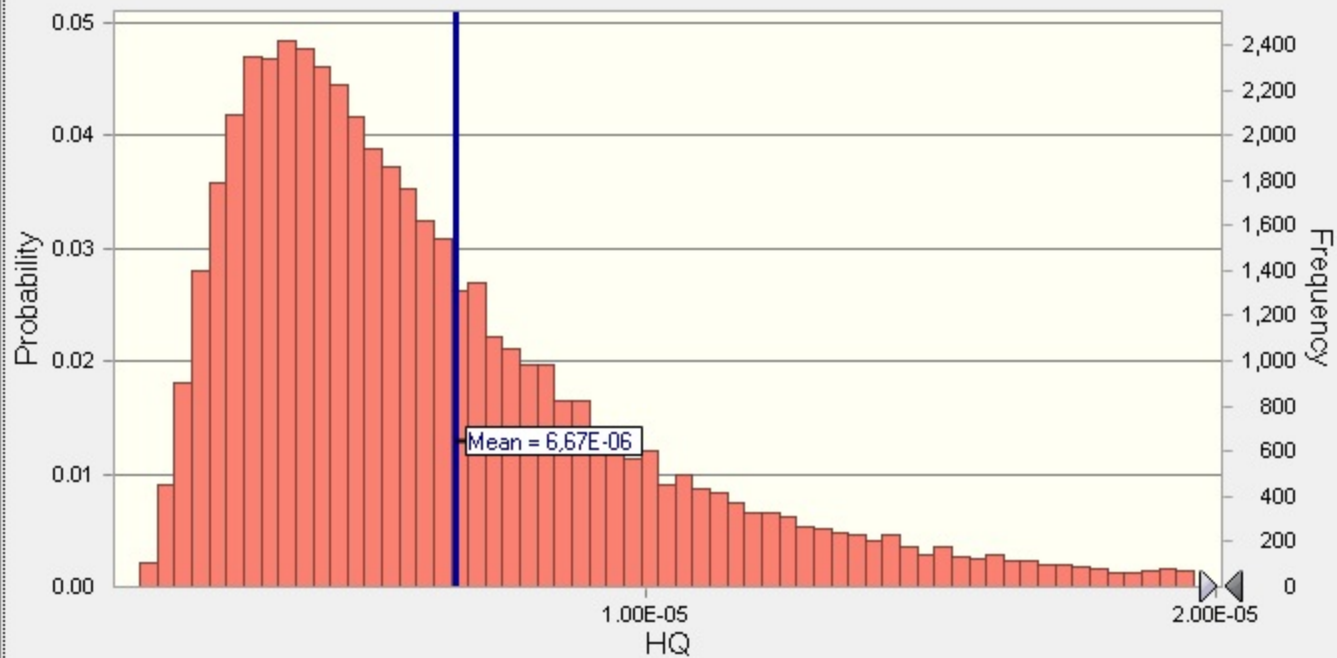
∞

50,000 Trials

Frequency View

48,906 Displayed

HQ Cd Child



2,00E-01

Certainty:

0,000

%

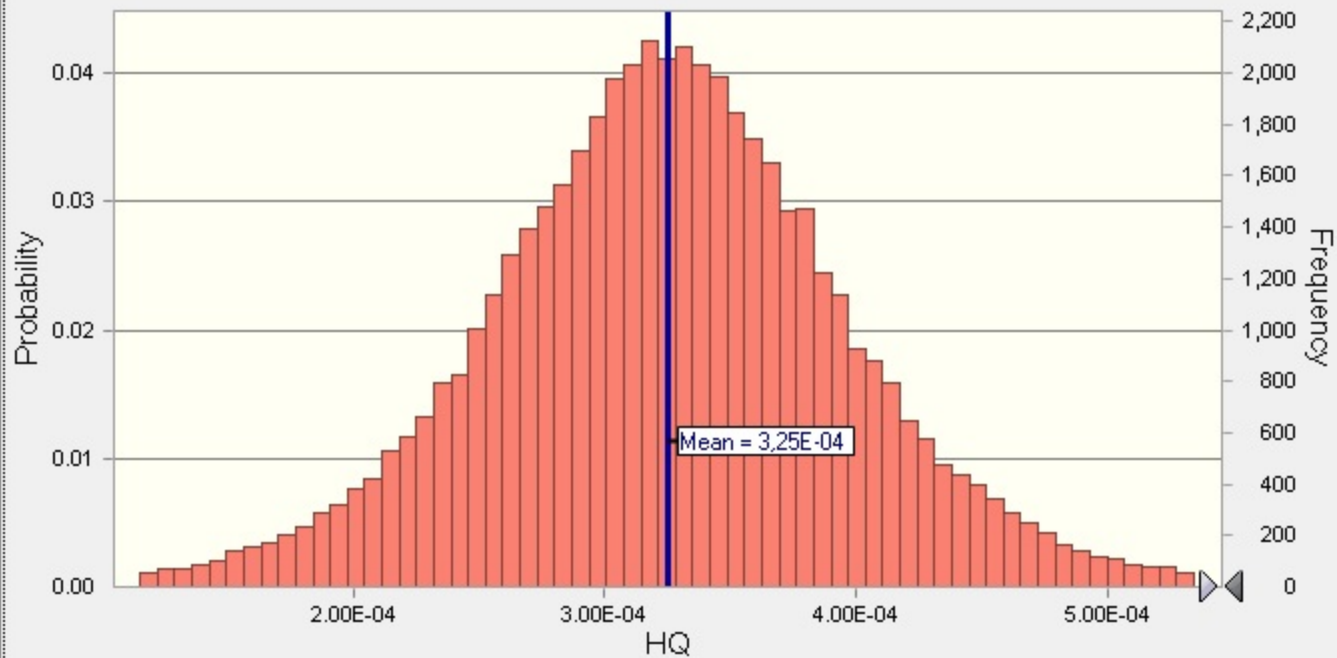
∞

50,000 Trials

Frequency View

49,381 Displayed

HQ Co Child



2,00E-01

Certainty:

0,000

%

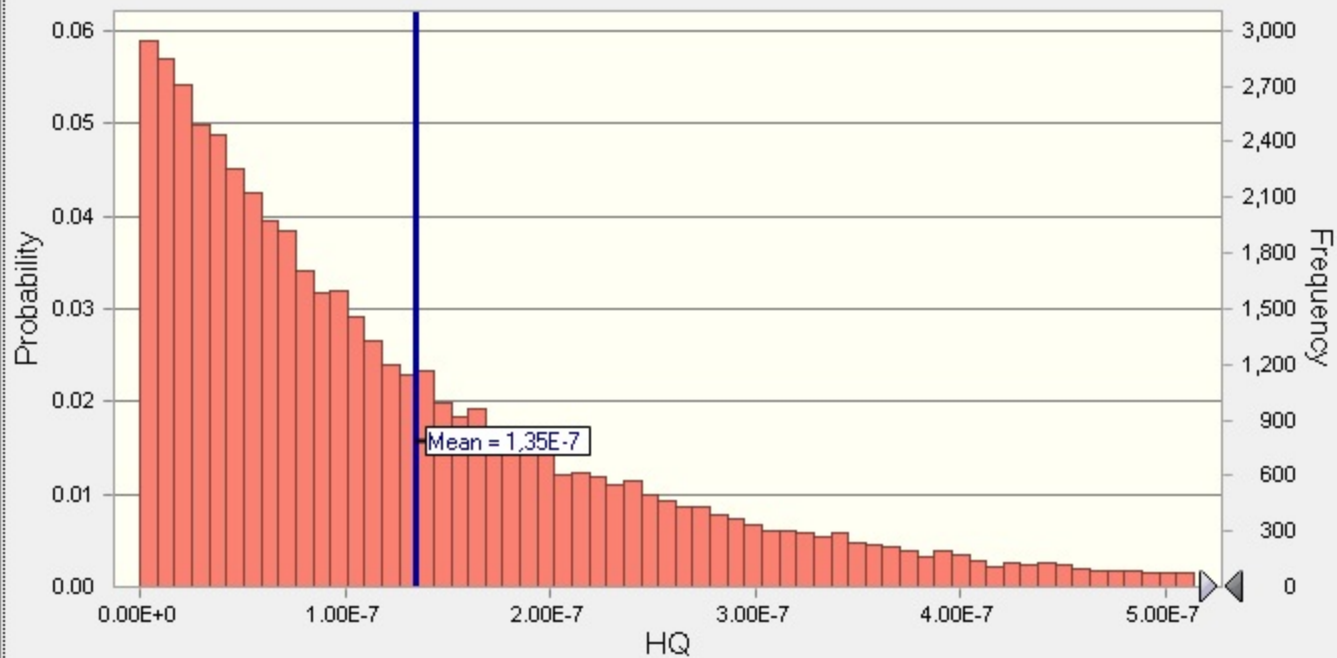
∞

50,000 Trials

Frequency View

48,870 Displayed

HQ Hg Child



2,00E-1

Certainty:

0,000

%

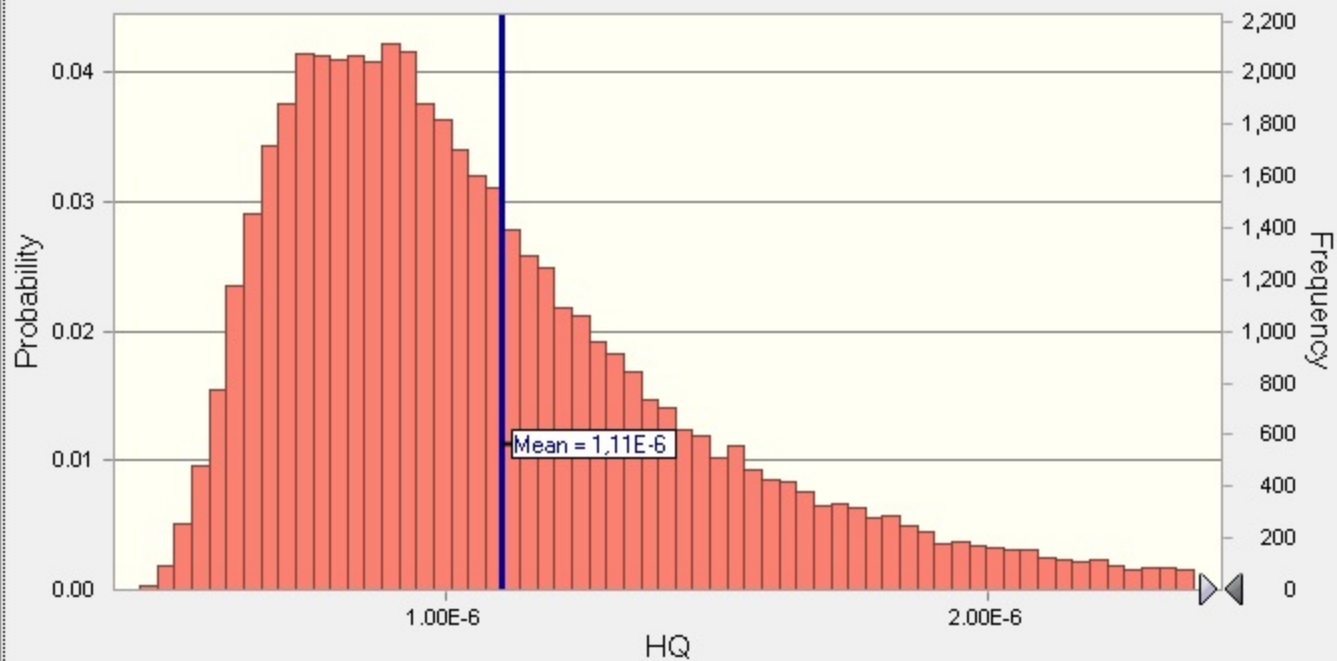
∞

50,000 Trials

Frequency View

48,988 Displayed

HQ Mo Child



2,00E-1

Certainty:

0,000

%

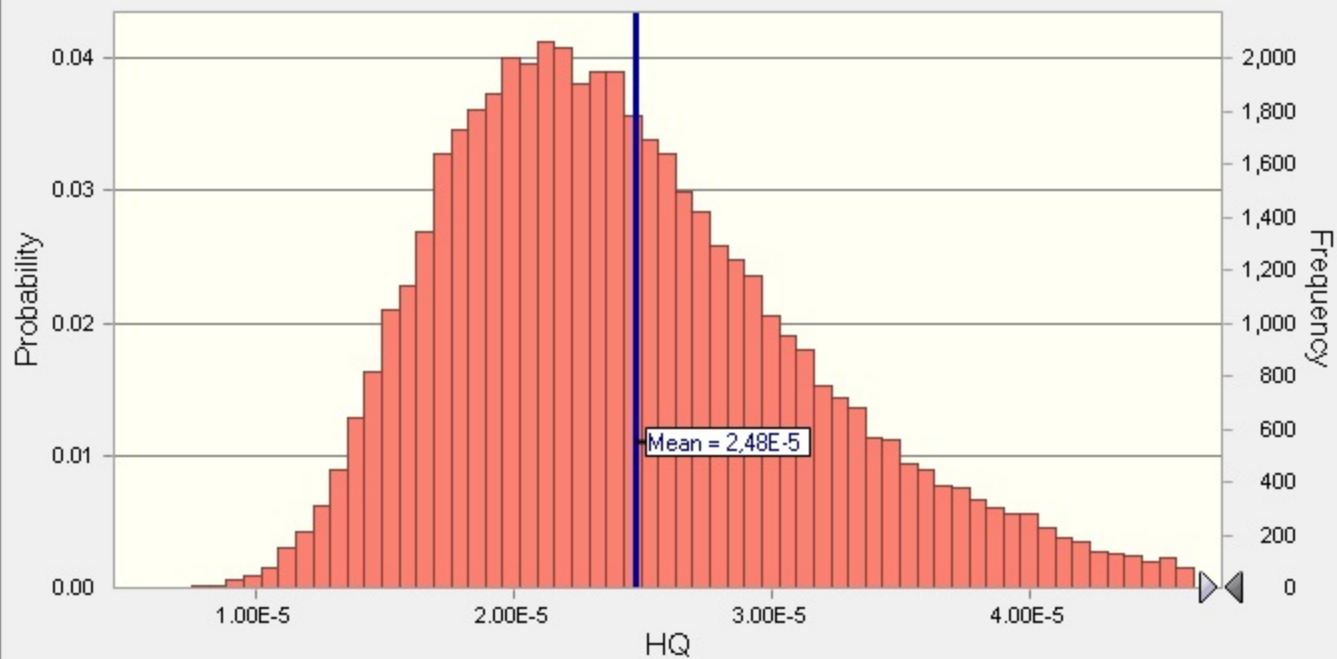
∞

50,000 Trials

Frequency View

49,238 Displayed

HQ Ni Child



2,00E-1

Certainty:

0,000

%

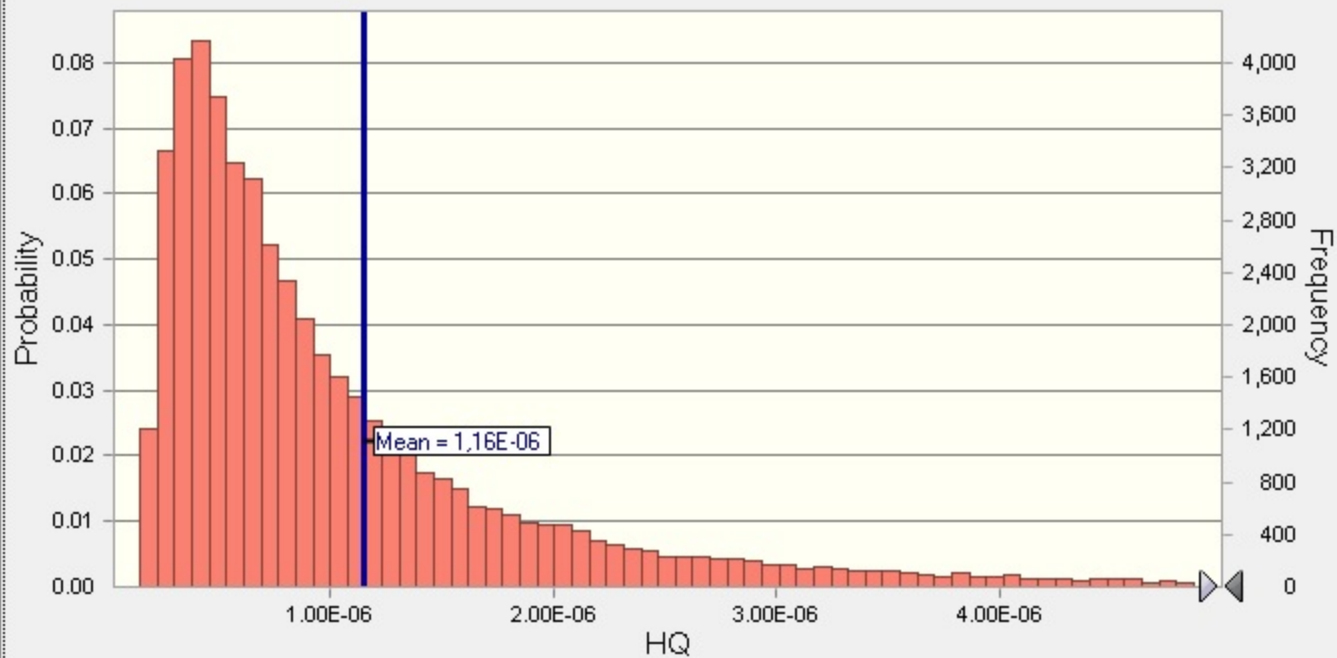
∞

50,000 Trials

Frequency View

48,961 Displayed

HQ Sb Child



2,00E-01

Certainty:

0,000

%

∞

HQs INHALATION ADULTS

HQ inh- Child

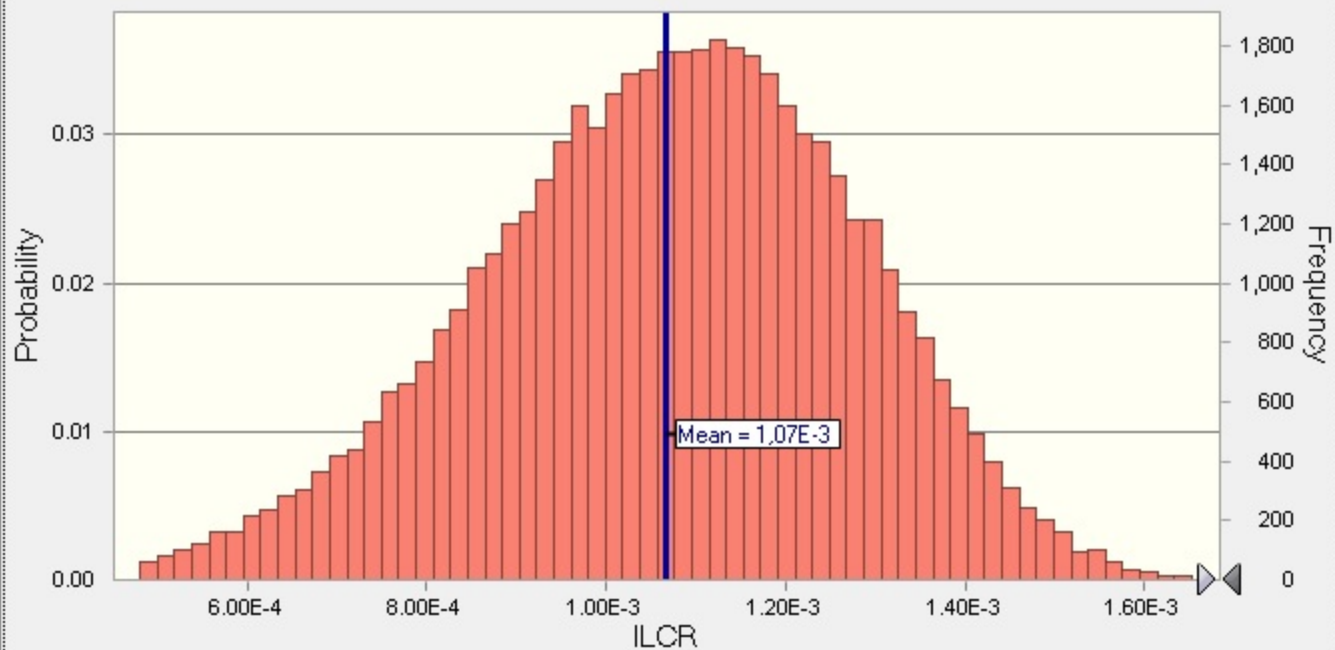
Element	As	Be	Cd	Co	Hg	Mo	Ni	Sb
Level of certainty	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Mean	1.07E-03	1.56E-05	3.33E-05	1.62E-03	6.79E-07	5.53E-06	1.24E-04	5.75E-06
Median	1.08E-03	1.56E-05	2.69E-05	1.62E-03	4.73E-07	4.96E-06	1.18E-04	3.77E-06
Min	2.42E-04	-9.22E-06	5.42E-06	-3.42E-04	1.33E-11	2.15E-06	3.72E-05	7.50E-07
Max	1.70E-03	4.19E-05	4.84E-04	3.89E-03	6.33E-06	4.58E-05	3.94E-04	1.68E-04
St. Dev.	2.09E-04	5.99E-06	2.35E-05	3.73E-04	6.75E-07	2.31E-06	3.85E-05	6.48E-06

50,000 Trials

Frequency View

49,778 Displayed

ILCR As Child



2,00E-1

Certainty:

0,000

%

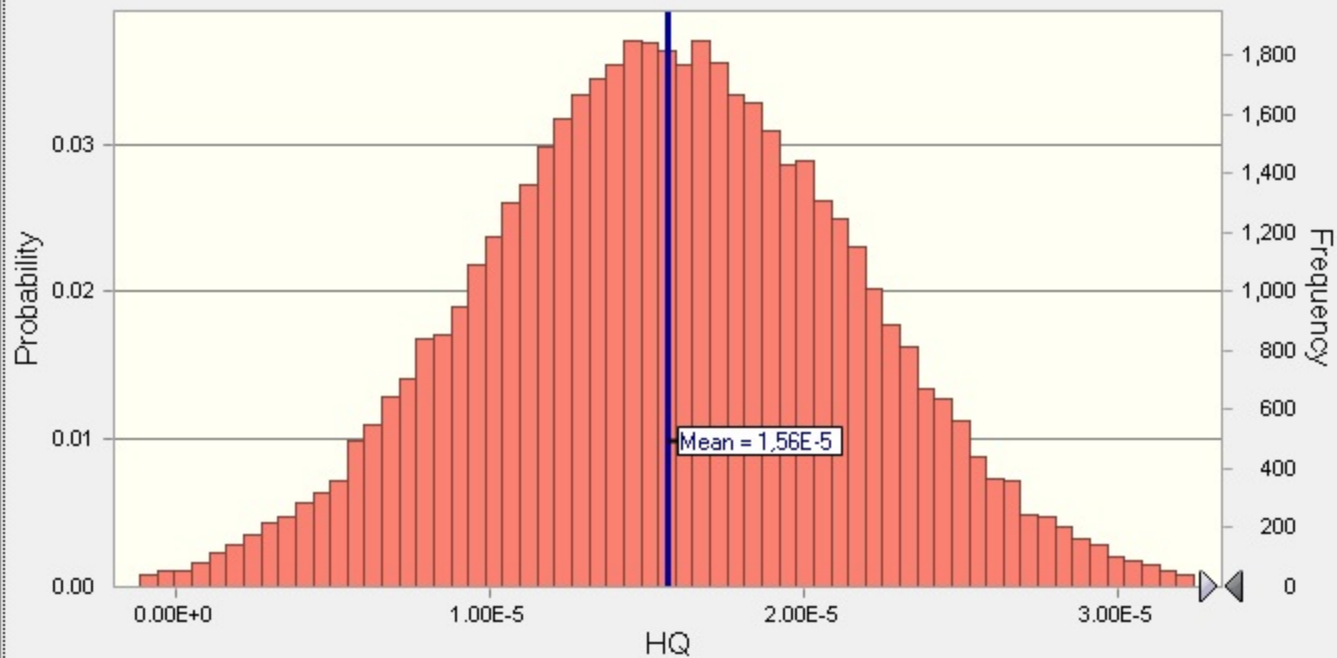
∞

50,000 Trials

Frequency View

49,742 Displayed

HQ Be Adult



2,00E-1

Certainty:

0,000

%

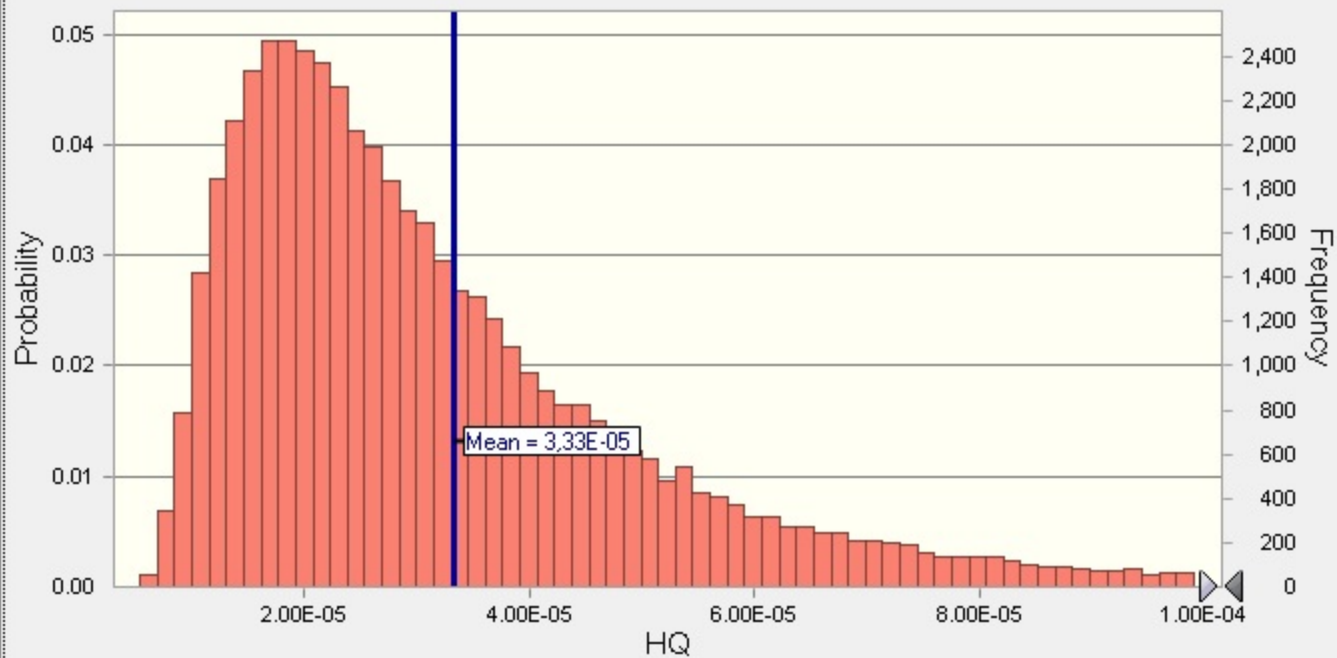
∞

50,000 Trials

Frequency View

48,934 Displayed

HQ Cd Adult



2,00E-01

Certainty:

0,000

%

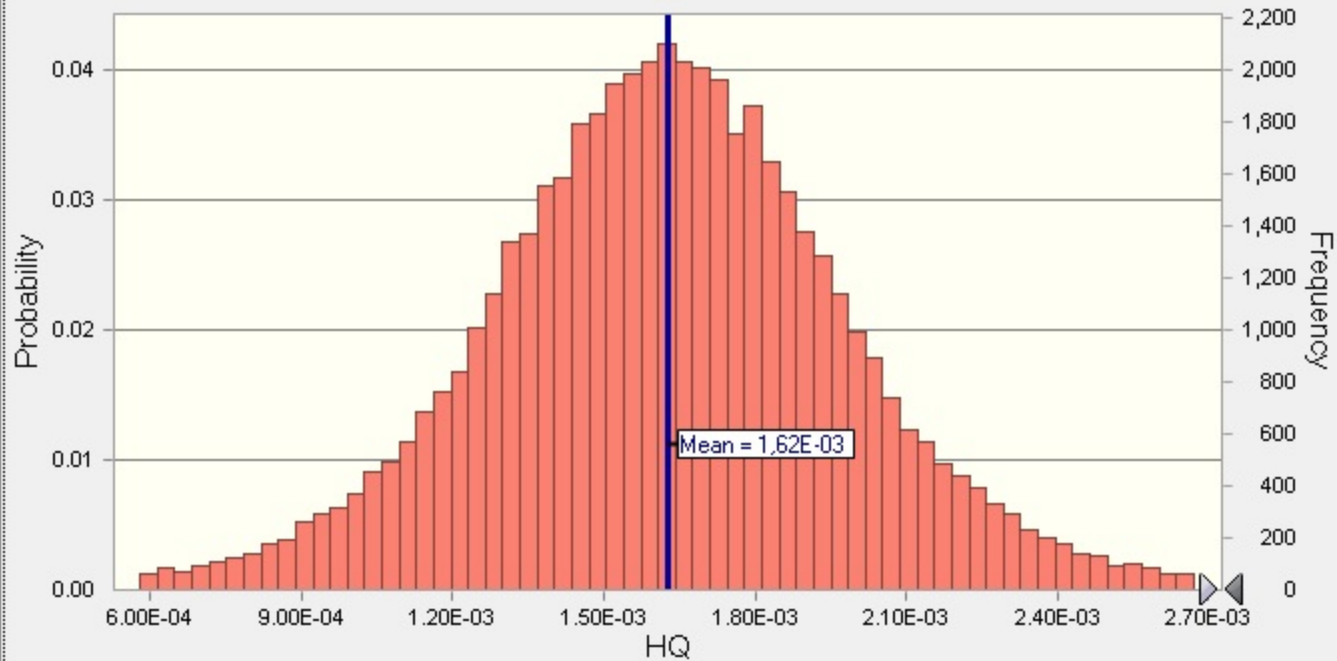
∞

50,000 Trials

Frequency View

49,377 Displayed

HQ Co Adult



2,00E-01

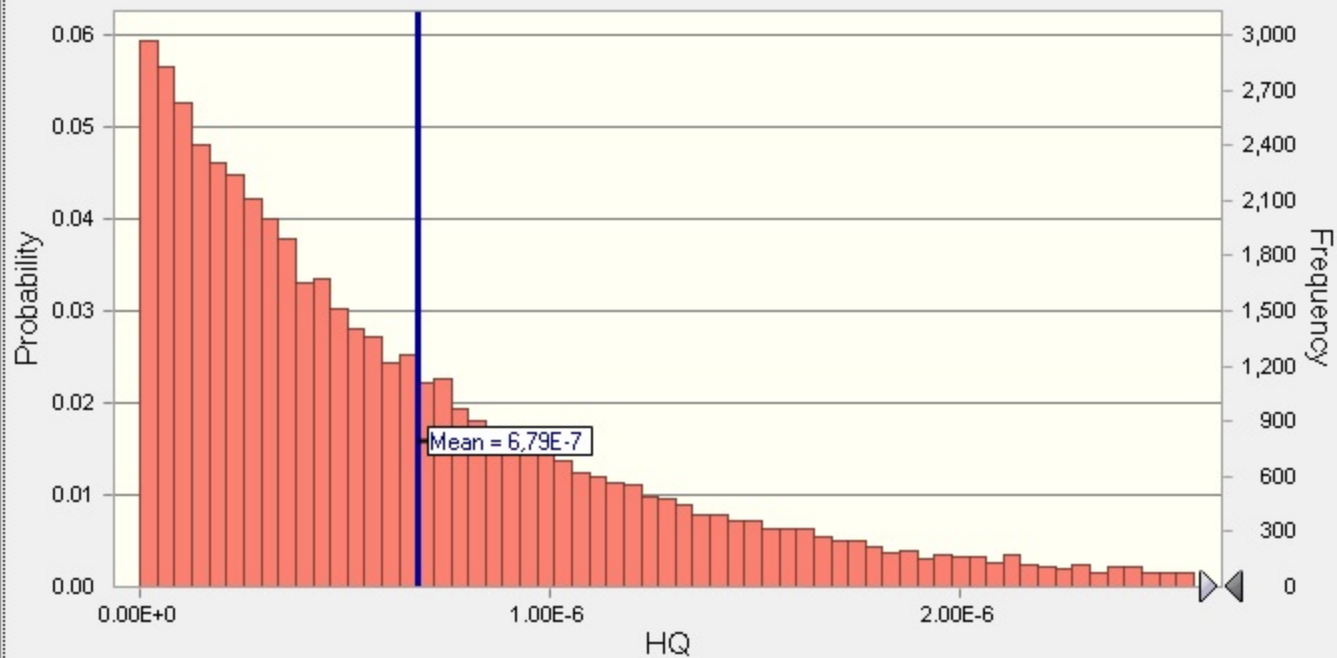
Certainty:

0,000

%

∞

HQ Hg Adult

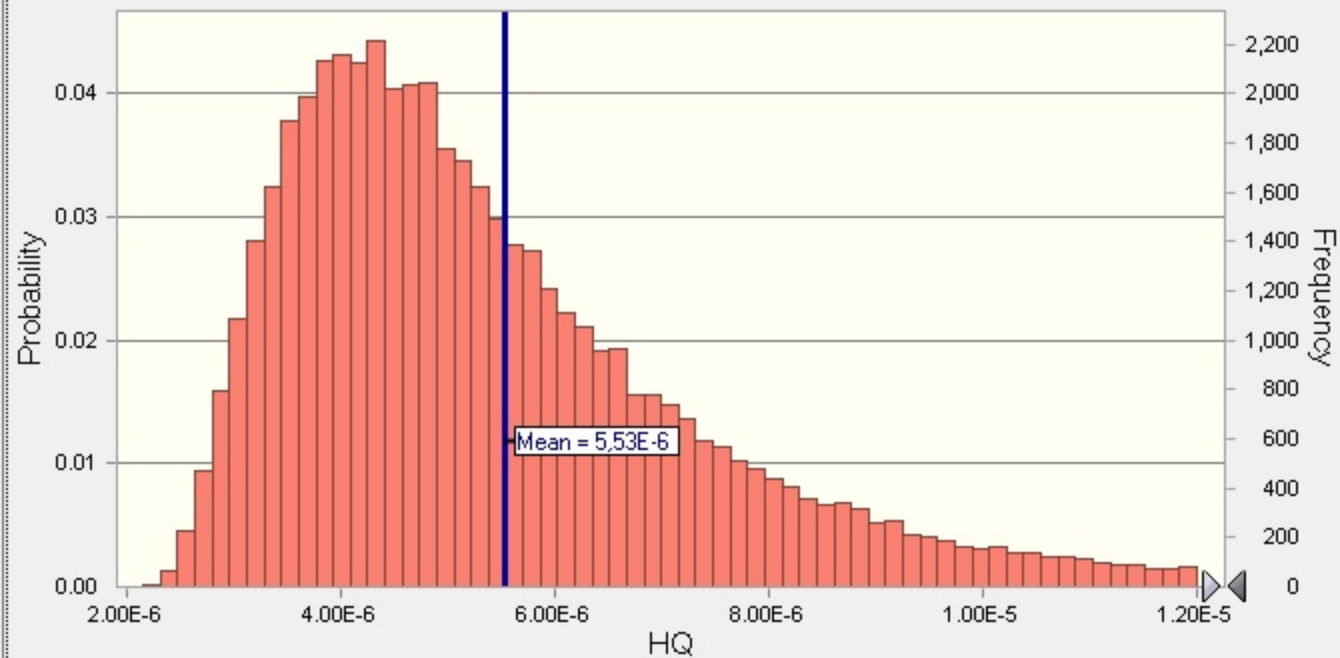


50,000 Trials

Frequency View

48,957 Displayed

HQ Mo Adult



2,00E-1

Certainty:

0,000

%

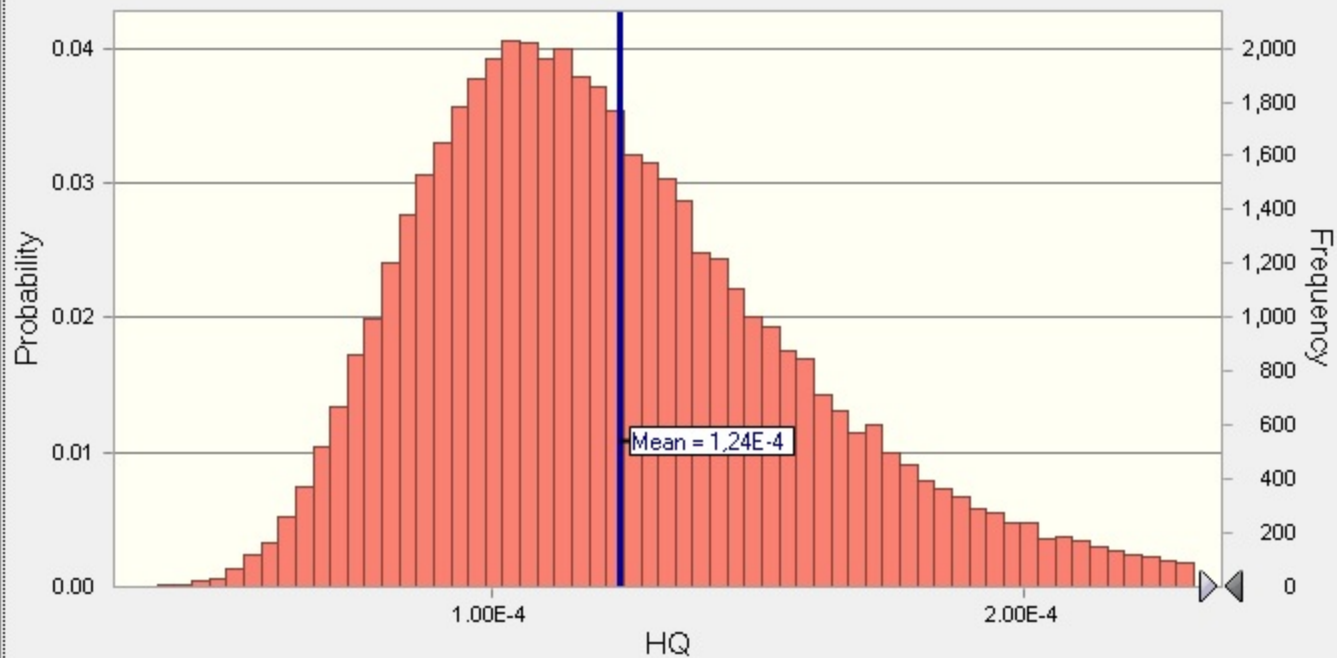
∞

50,000 Trials

Frequency View

49,209 Displayed

HQ Ni Adult



2,00E-1

Certainty:

0,000

%

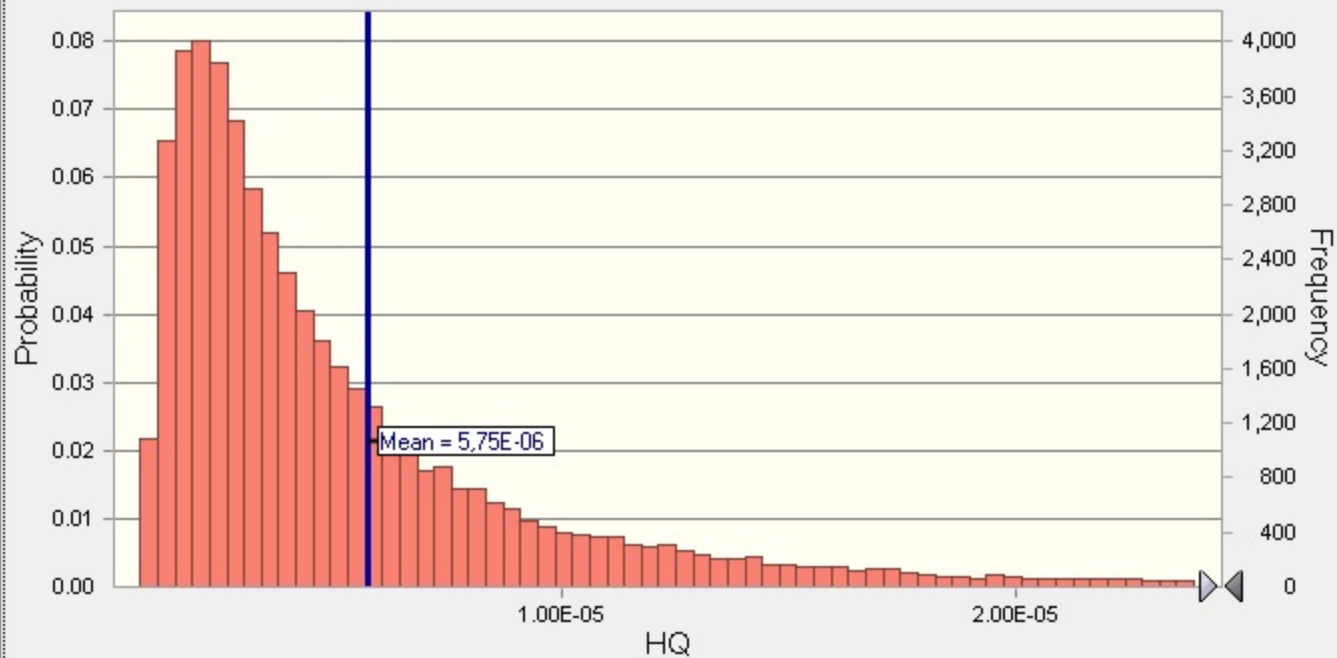
∞

50,000 Trials

Frequency View

48,910 Displayed

HQ Sb Adult



2,00E-01

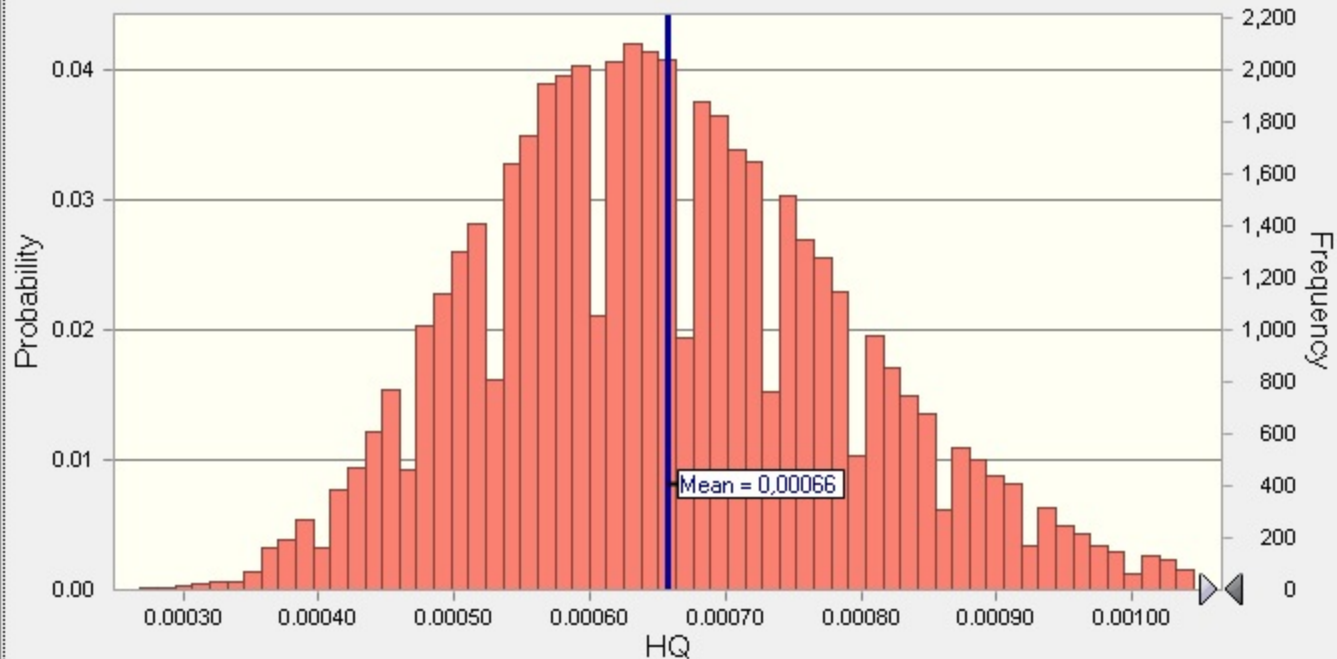
Certainty:

0,000

%

∞

V - HQinh-nc - Adult



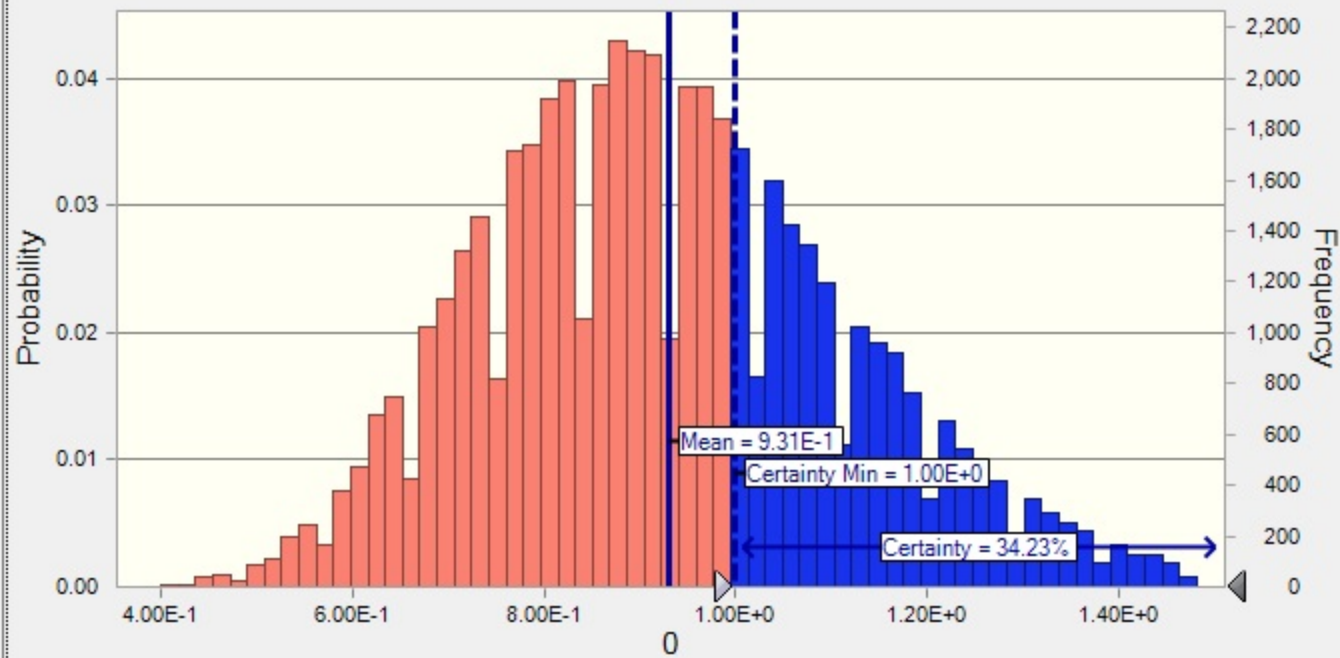
HIS INGESTION CHILDREN

50,000 Trials

Frequency View

49,596 Displayed

HI Blood (V)



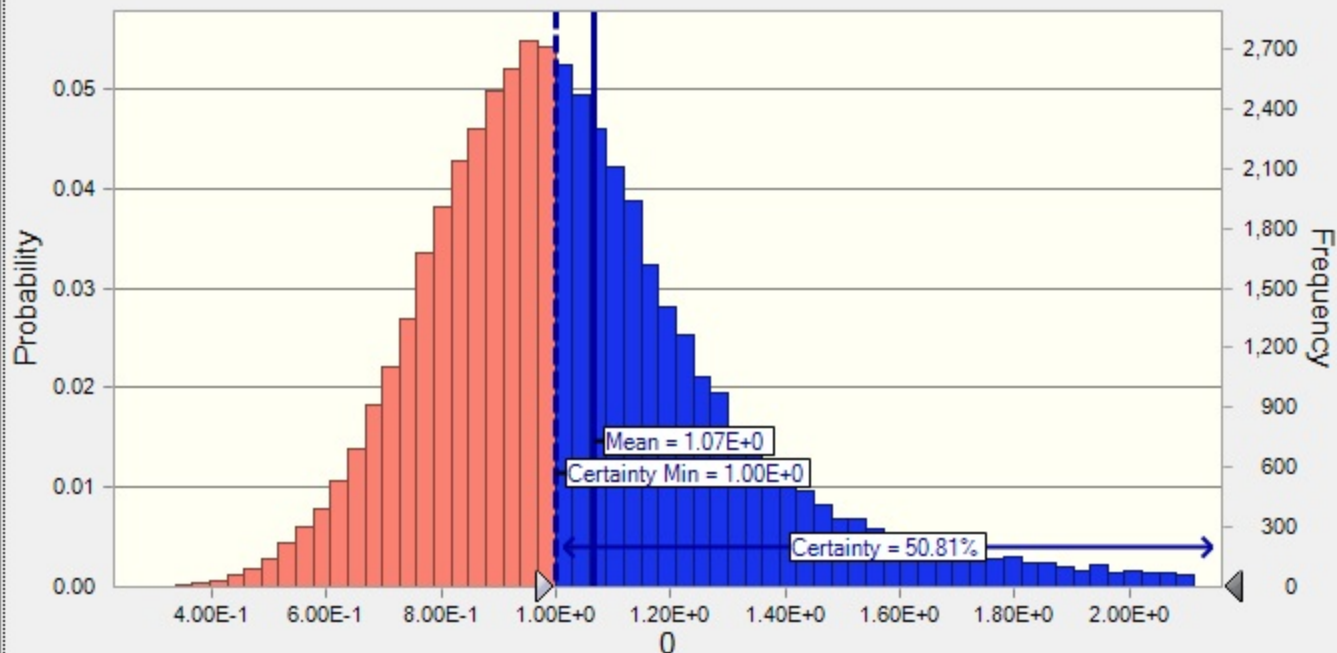
1.00E+0

Certainty: 34.226

%

=

HI Cardiovascular System (As and Pb)



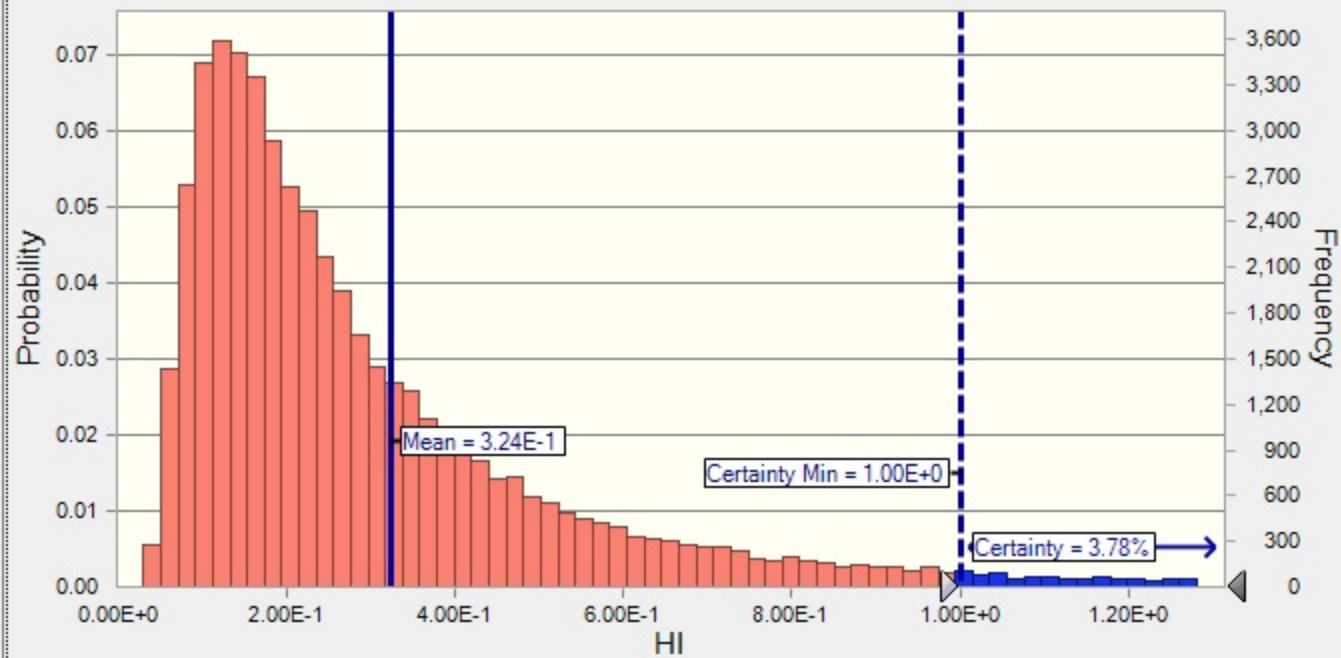
1.00E+0

Certainty: 50.805

%

=

HI Central Nervous System (Hg and Pb)



1.00E+0

Certainty:

3.783

%

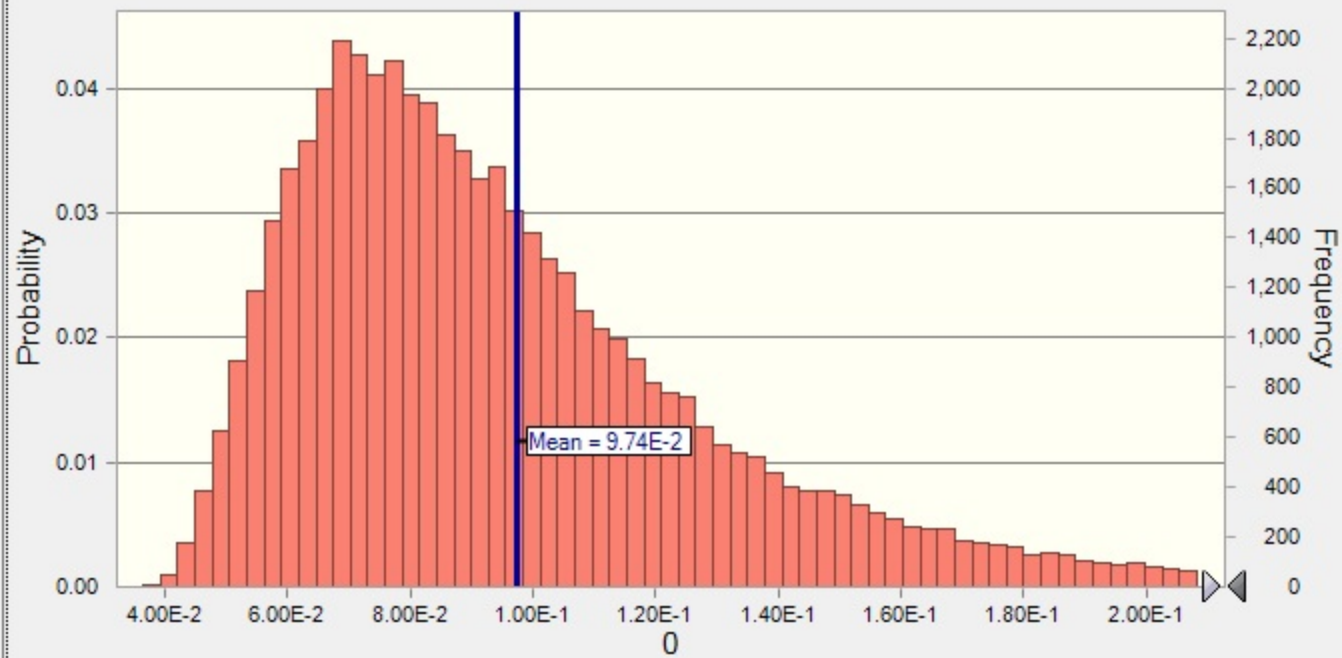
=

50,000 Trials

Frequency View

48,992 Displayed

HI Cr tot



1.00E+0

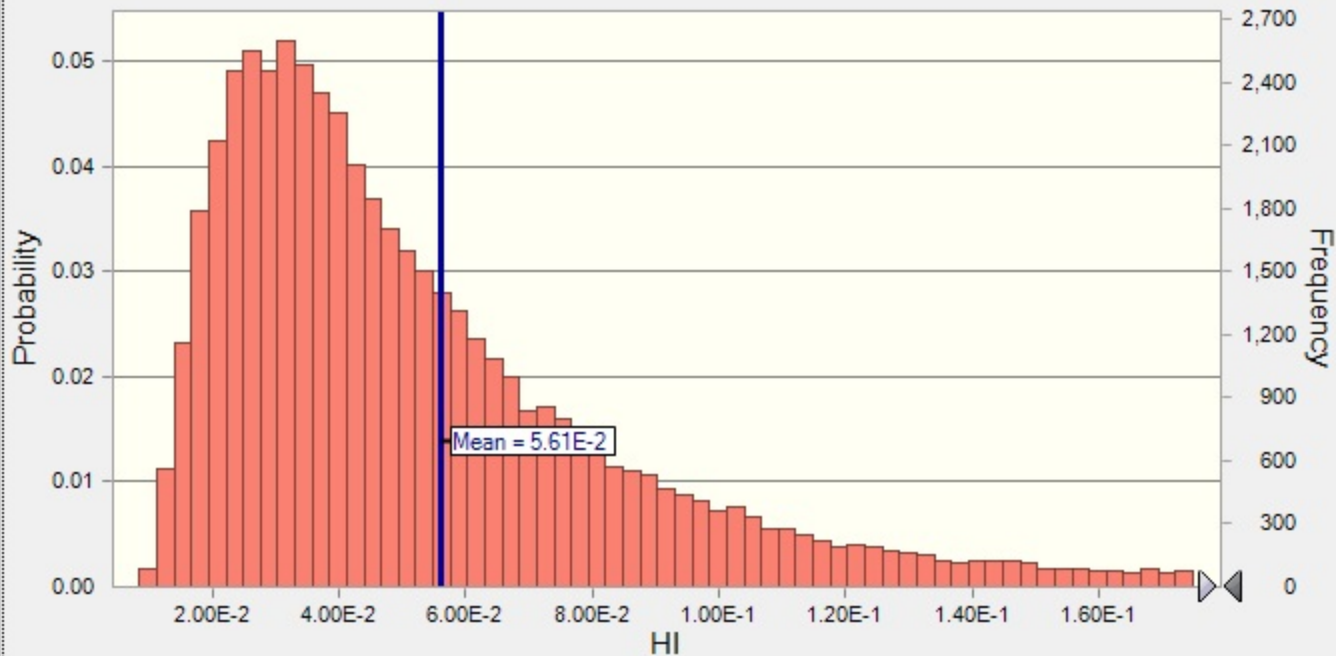
Certainty:

0.000

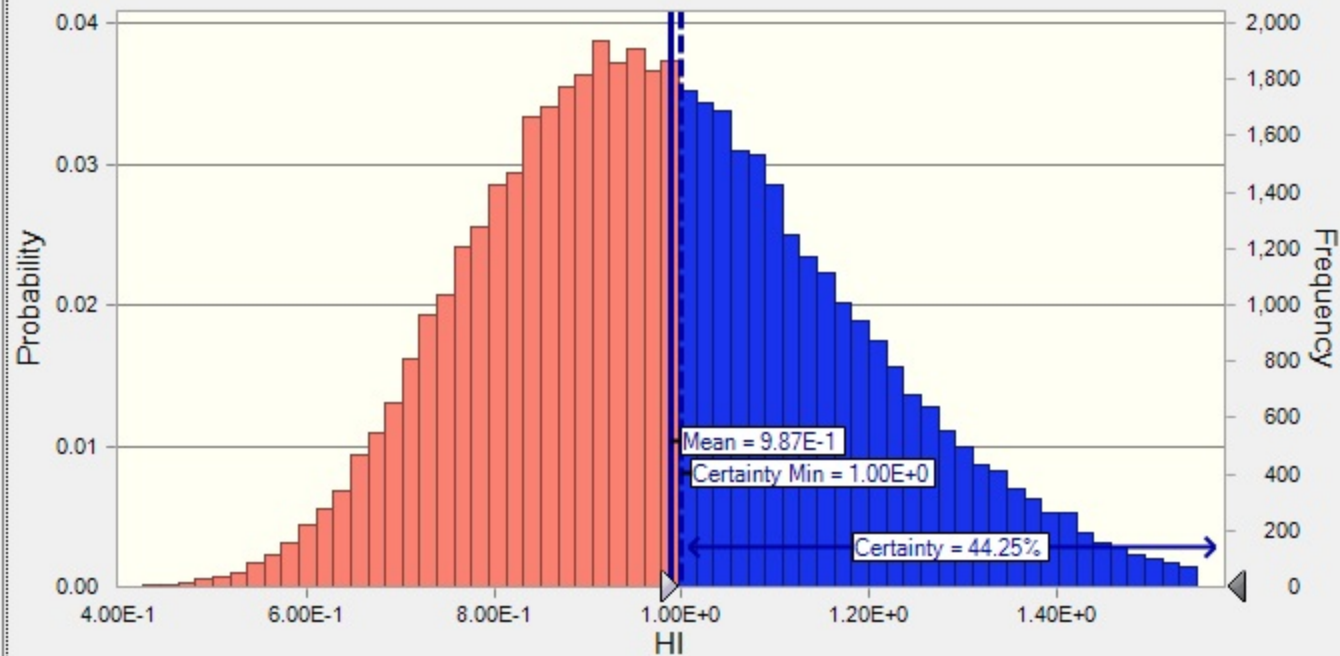
%

=

HI Development, Reproduction, Hematopoietic system and Liver - Child (Cu)



HI Gastrointestinal System (Cu and V)



1.00E+0

Certainty: 44.252

%

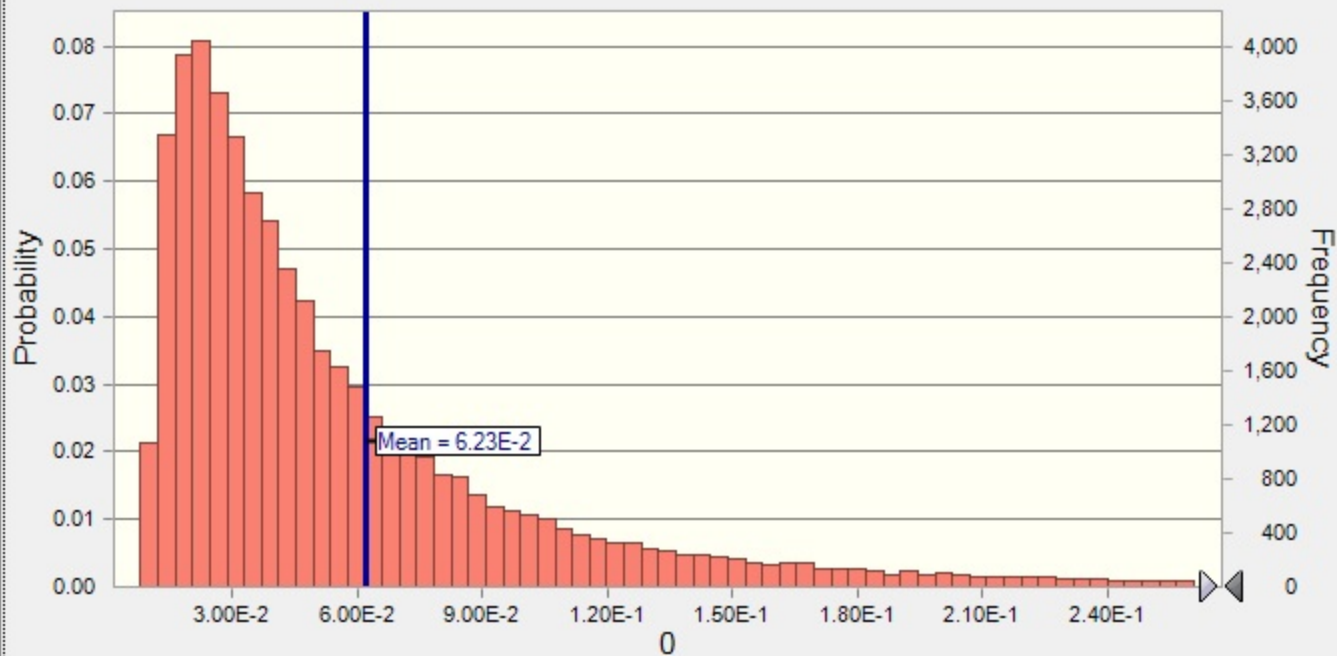
=

50,000 Trials

Frequency View

48,977 Displayed

HI Gastrointestinal Tract (Sb)



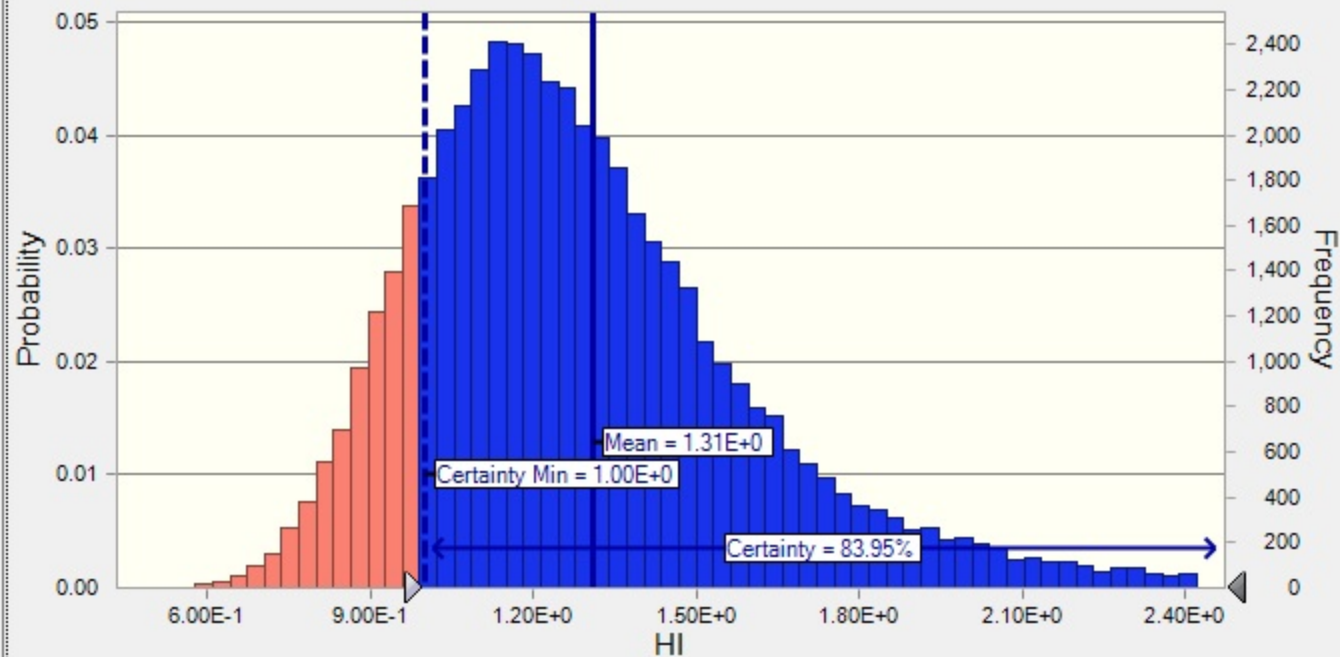
1.00E+0

Certainty: 0.029

%

=

HI Kidney (Cu, Hg, PB and V)



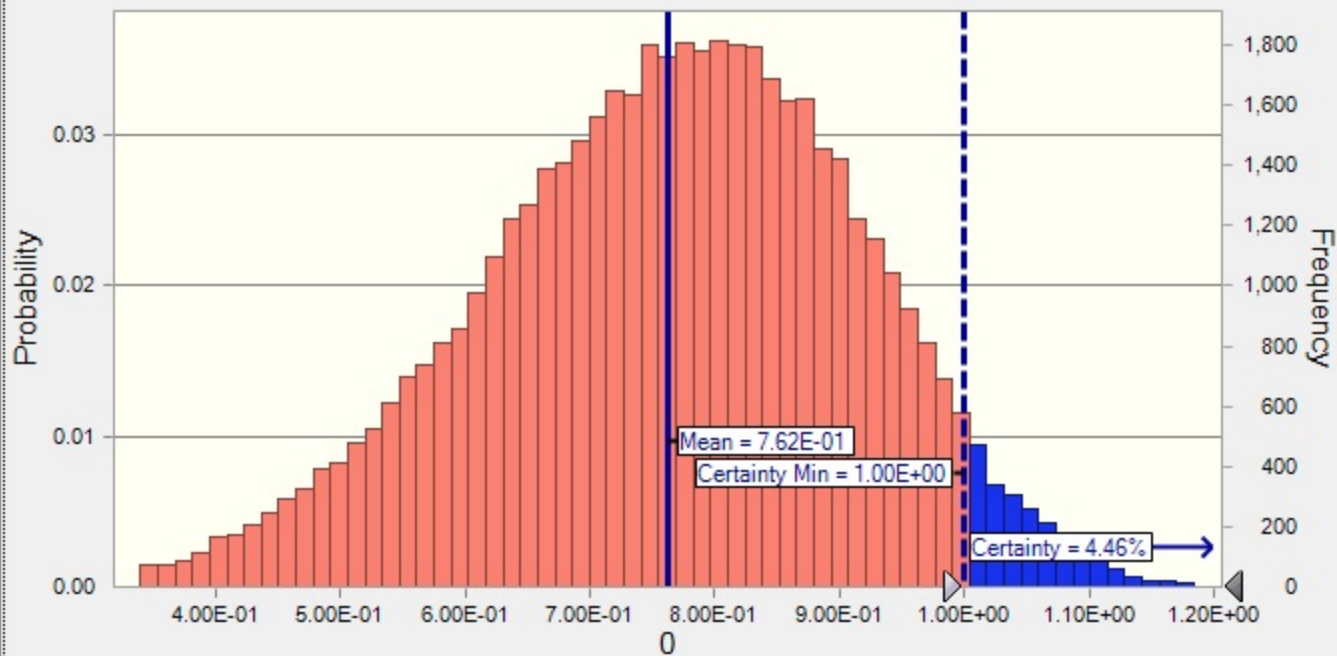
1.00E+0

Certainty: 83.951

%

=

HI Nervous System (As)



1.00E+00

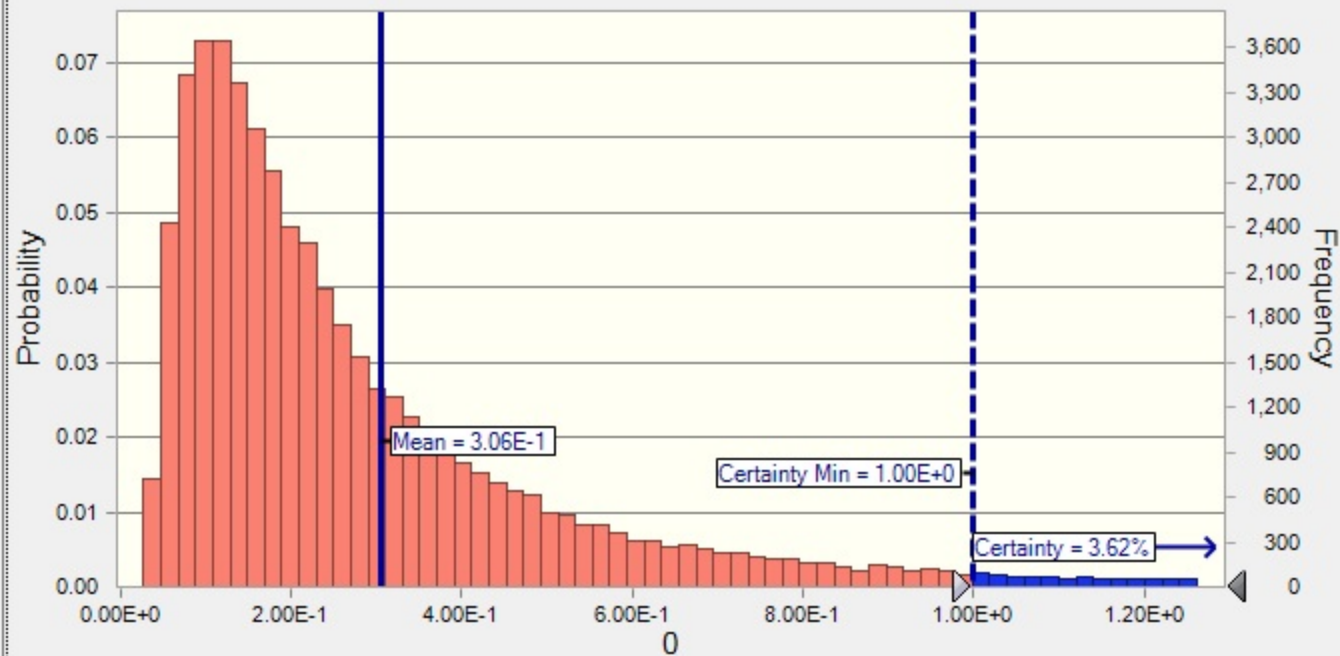
Certainty:

4.465

%

=

HI Red Blood Cell (Pb)



1.00E+0

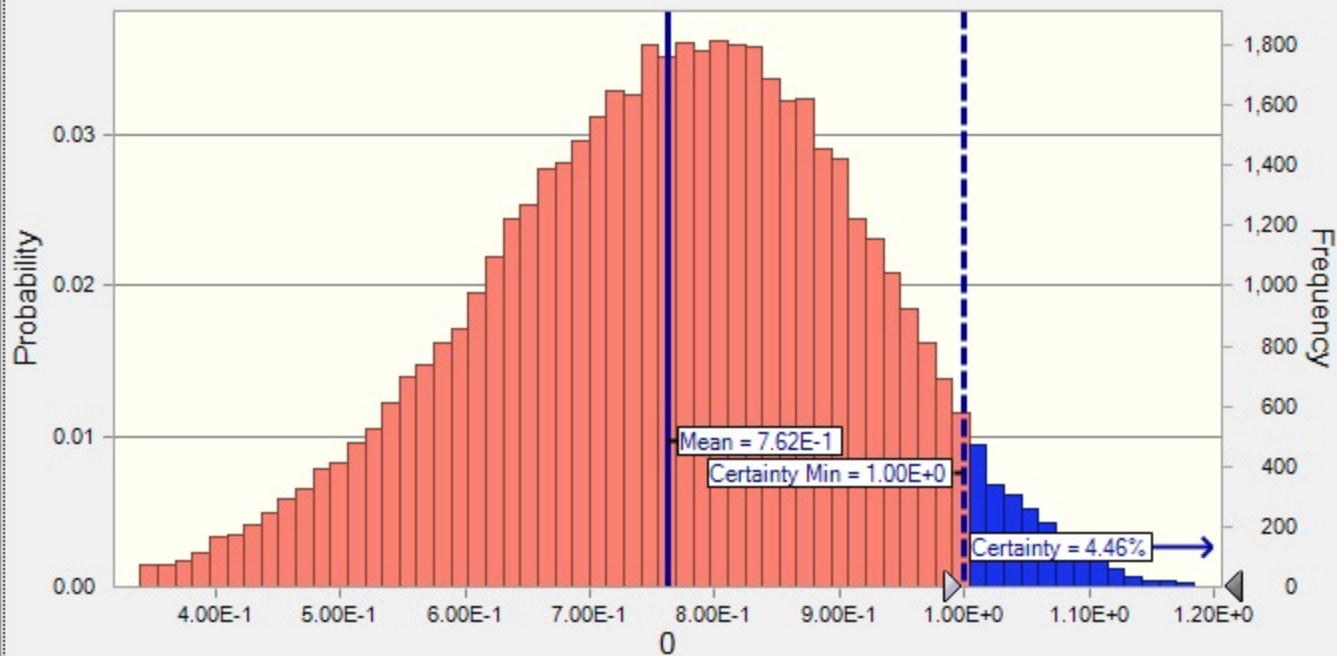
Certainty:

3.622

%

=

HI Skin (As)



1.00E+0

Certainty:

4.465

%

=

ILCRs INHALATION CHILDREN

ILCR inhalation - Child

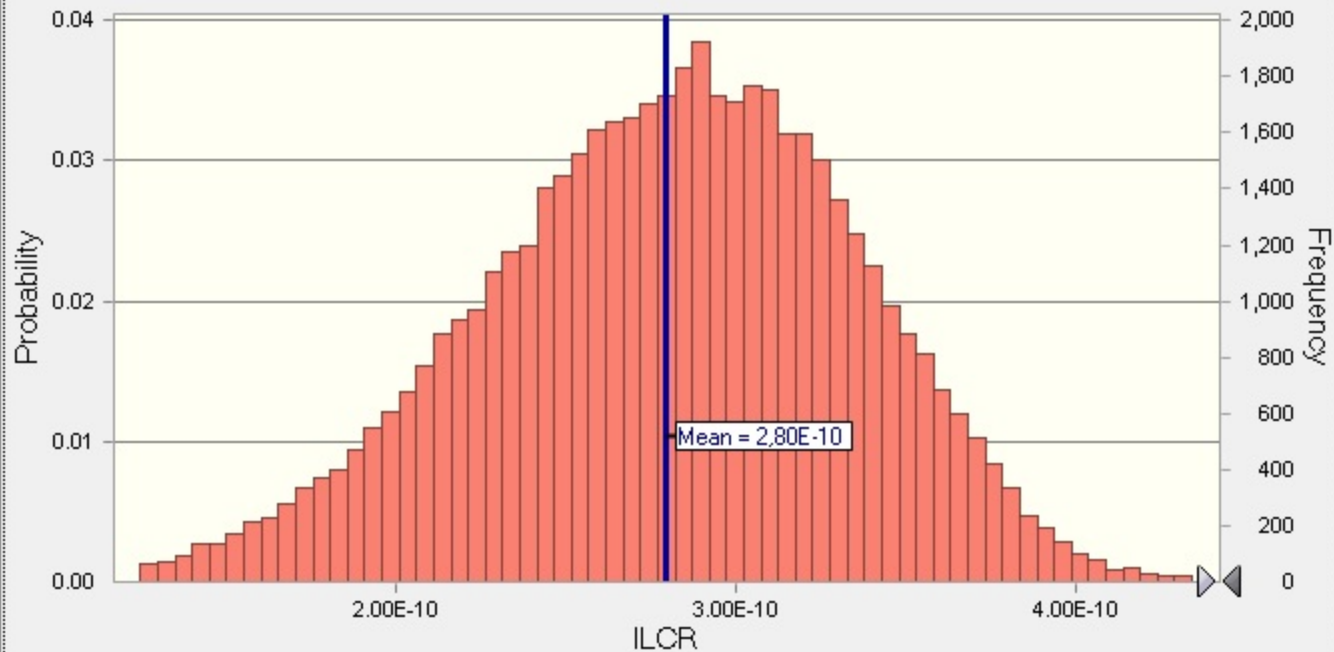
Element	As	Be	Cd	Co	Cr _{Tot}	Ni	Pb
Level of certainty	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.27%
Mean	2.80E-10	9.83E-12	1.39E-11	8.15E-11	1.14E-10	3.23E-09	4.70E-07
Median	2.83E-10	9.84E-12	1.13E-11	8.14E-11	1.01E-10	3.07E-09	3.17E-07
Min	5.29E-11	-7.38E+12	2.17E-12	-1.40E-11	4.41E-11	8.79E-10	4.20E-08
Max	4.47E-10	2.63E-11	3.70E-10	1.92E-10	7.09E-10	1.07E-08	1.67E-05
St. Dev.	5.52E-11	3.79E-12	9.64E-12	1.88E-11	5.13E-11	1.00E-09	5.09E-07

50,000 Trials

Frequency View

49,786 Displayed

ILCR As Child



1,00E-6

Certainty:

0,000

%

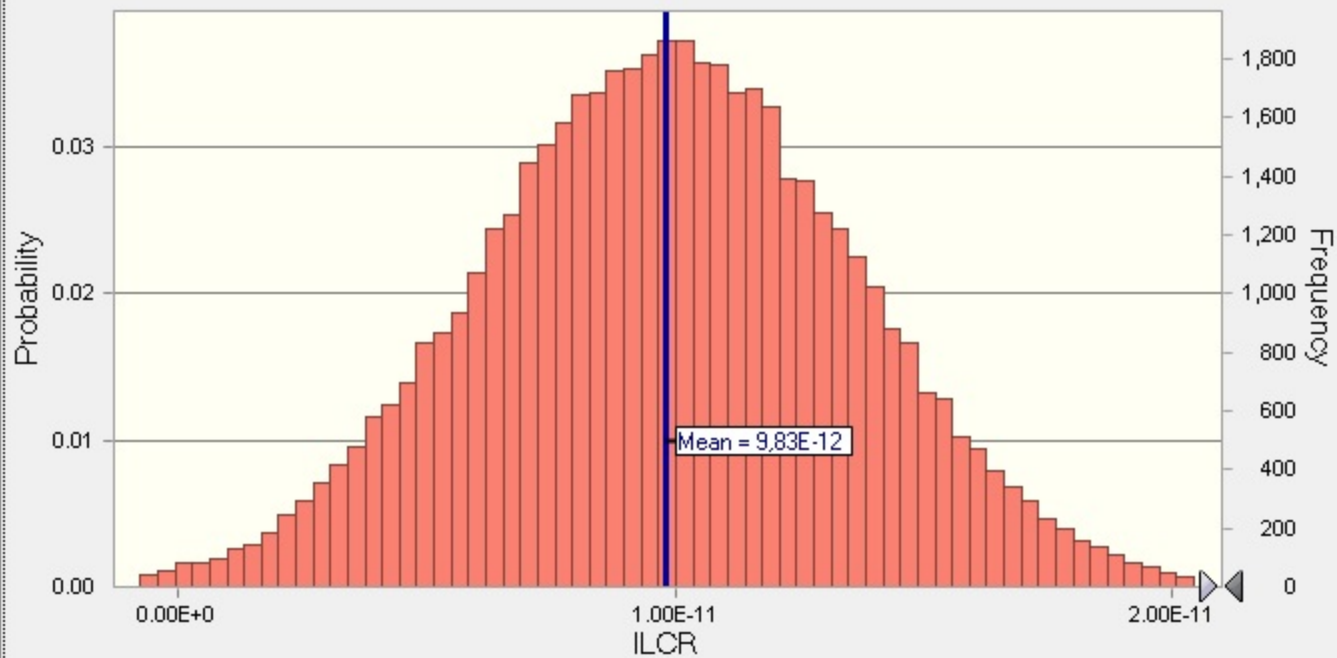
00

50,000 Trials

Frequency View

49,737 Displayed

ILCR Be Child



1,00E-6

Certainty:

0,000

%

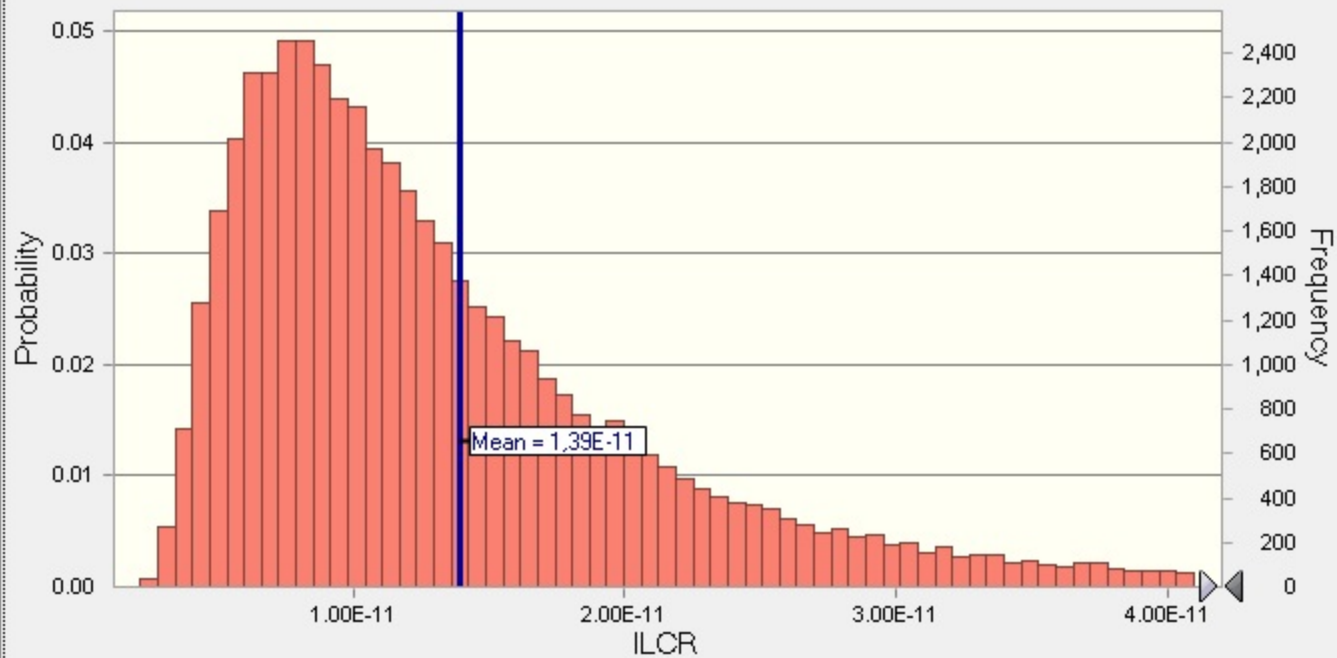
∞

50,000 Trials

Frequency View

48,961 Displayed

ILCR Cd Child



1,00E-6

Certainty:

0,000

%

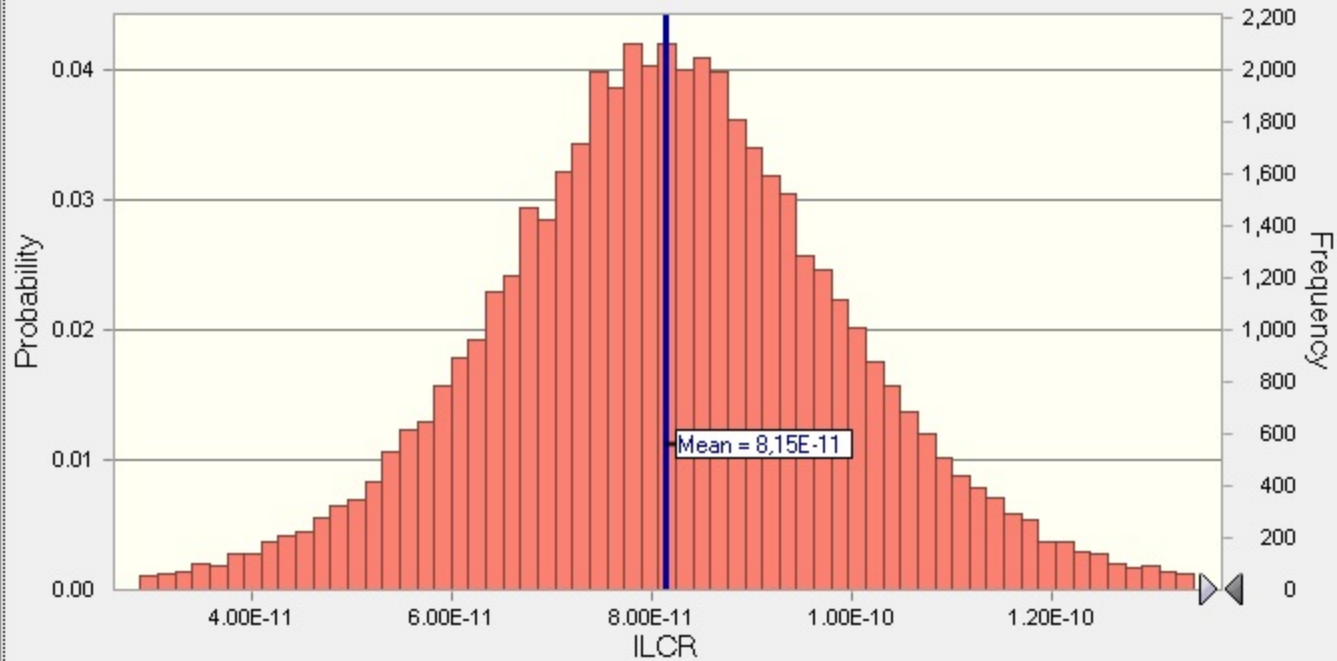
∞

50,000 Trials

Frequency View

49,401 Displayed

ILCR Co Child



1,00E-6

Certainty:

0,000

%

∞

50,000 Trials

Frequency View

48,930 Displayed

ILCR Cr Child



1,00E-6

Certainty:

0,000

%

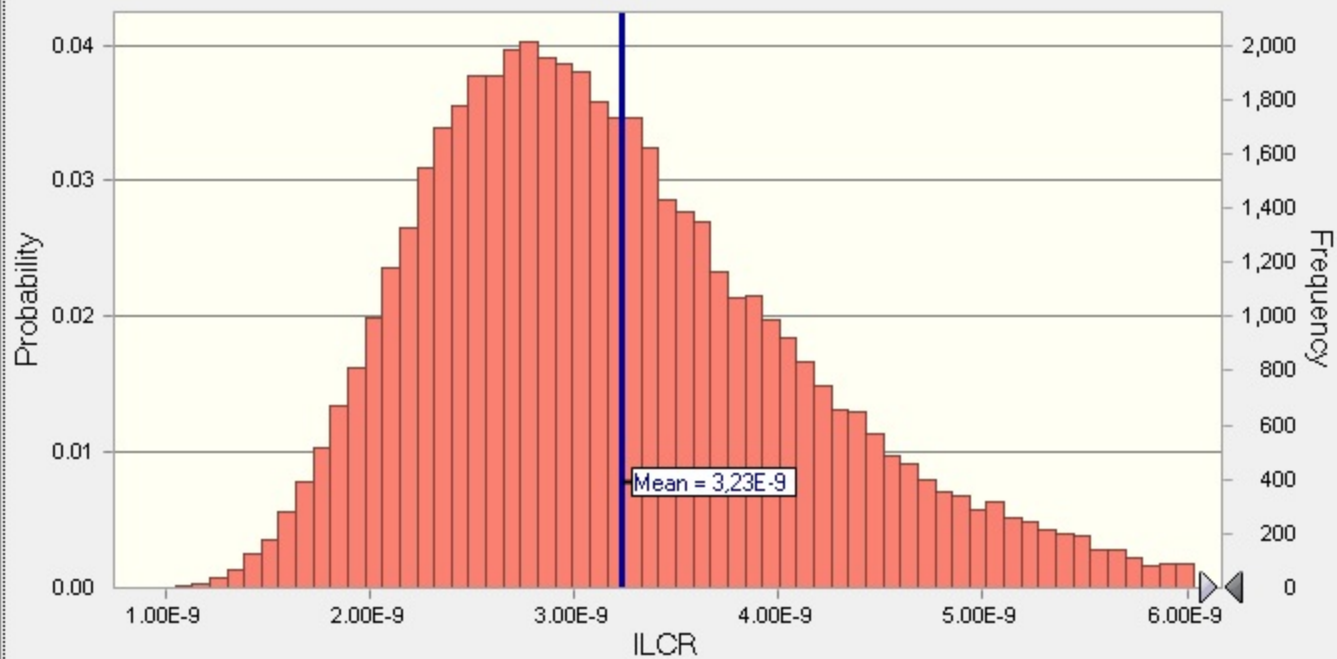
∞

50,000 Trials

Frequency View

49,251 Displayed

ILCR Ni Child



1,00E-6

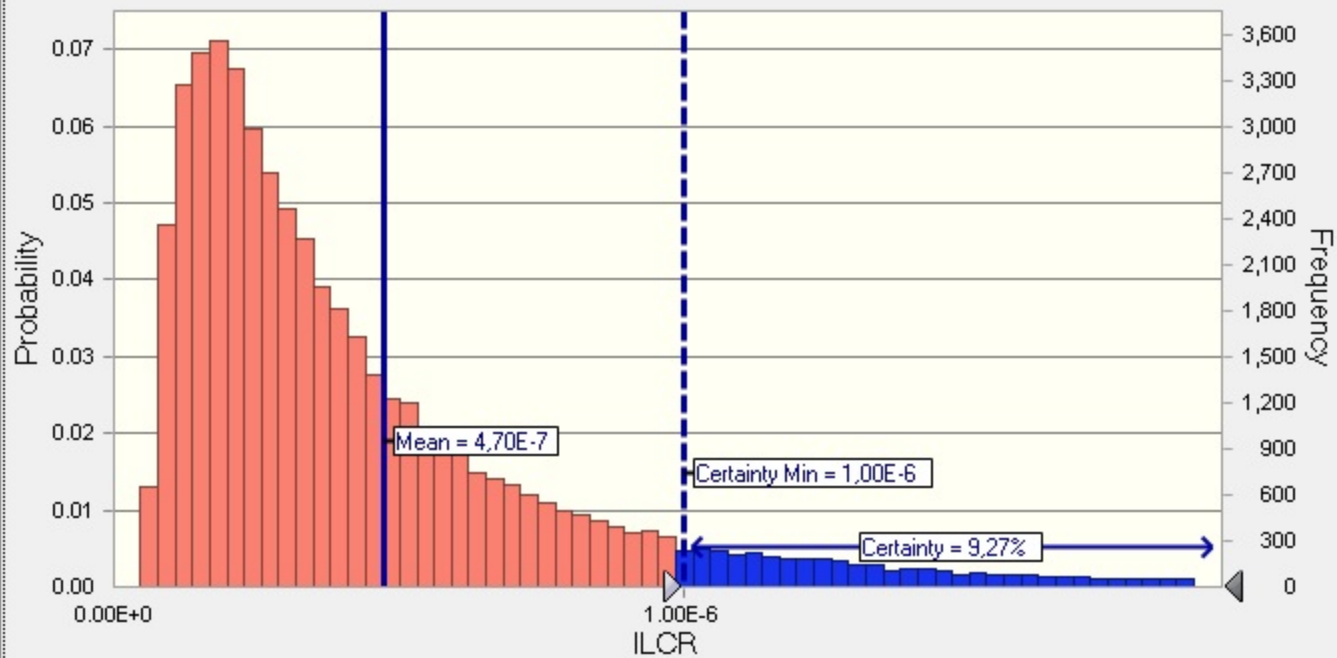
Certainty:

0,000

%

∞

ILCR Pb Child



Certainty:

%

ILCRs INHALATION

ADULTS

ILCR inhalation - Adult

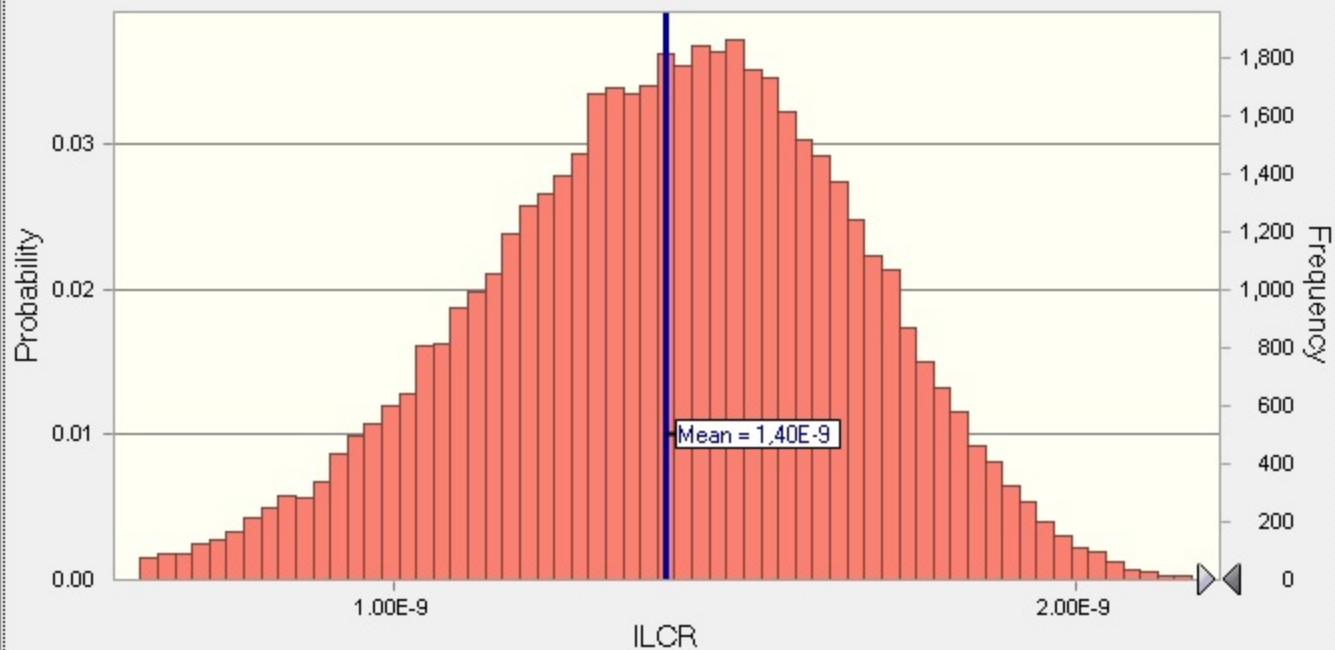
Element	As	Be	Cd	Co	Cr _{Tot}	Ni	Pb
Level of certainty	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	72.03%
Mean	1.40E-09	4.91E-11	6.99E-11	4.07E-10	5.72E-10	1.61E-08	2.36E-06
Median	1.42E-09	4.91E-11	5.67E-11	4.08E-10	5.06E-10	1.53E-08	1.59E-06
Min	3.43E-10	-3.31E-11	1.13E-11	-1.45E-10	2.23E-10	3.89E-09	2.07E-07
Max	2.36E-09	1.30E-10	1.28E-09	9.81E-10	4.02E-09	6.41E-08	6.64E-05
St. Dev.	2.75E-10	1.88E-11	4.48E-11	9.38E-11	2.57E-10	5.00E-09	2.57E-06

50,000 Trials

Frequency View

49,787 Displayed

ILCR As Adult



1,00E-6

Certainty:

0,000

%

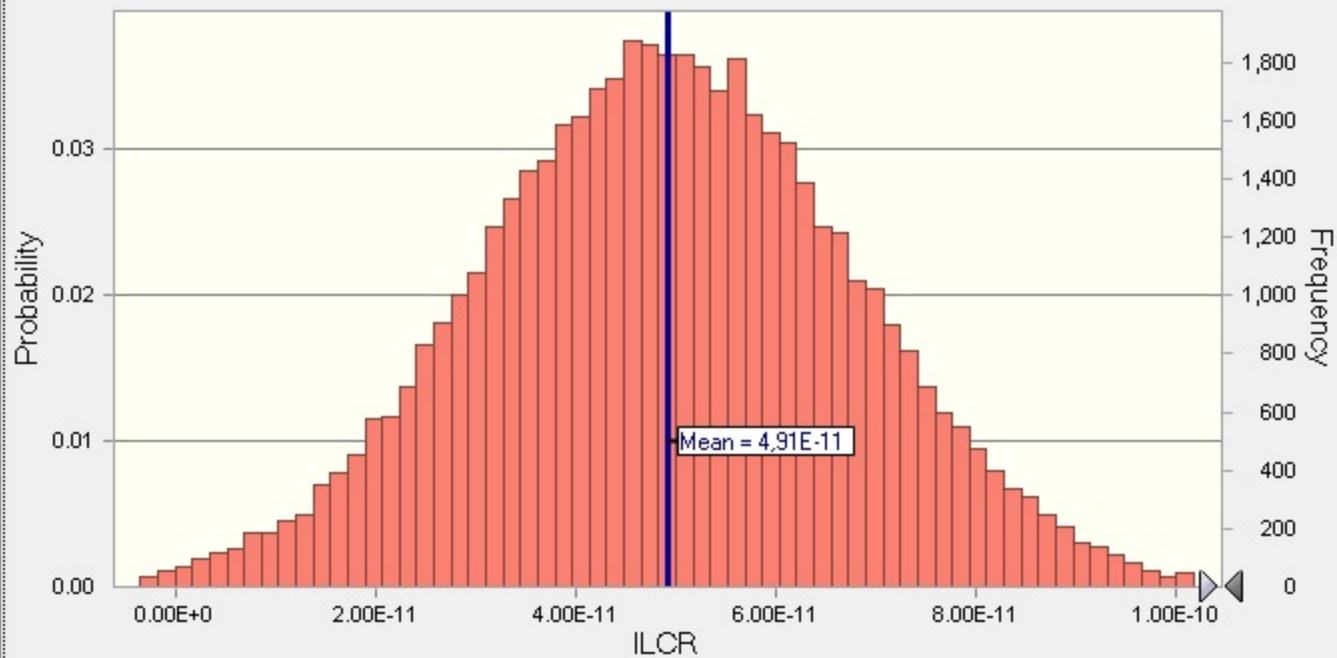
∞

50,000 Trials

Frequency View

49,718 Displayed

ILCR Be Adult



1,00E-6

Certainty:

0,000

%

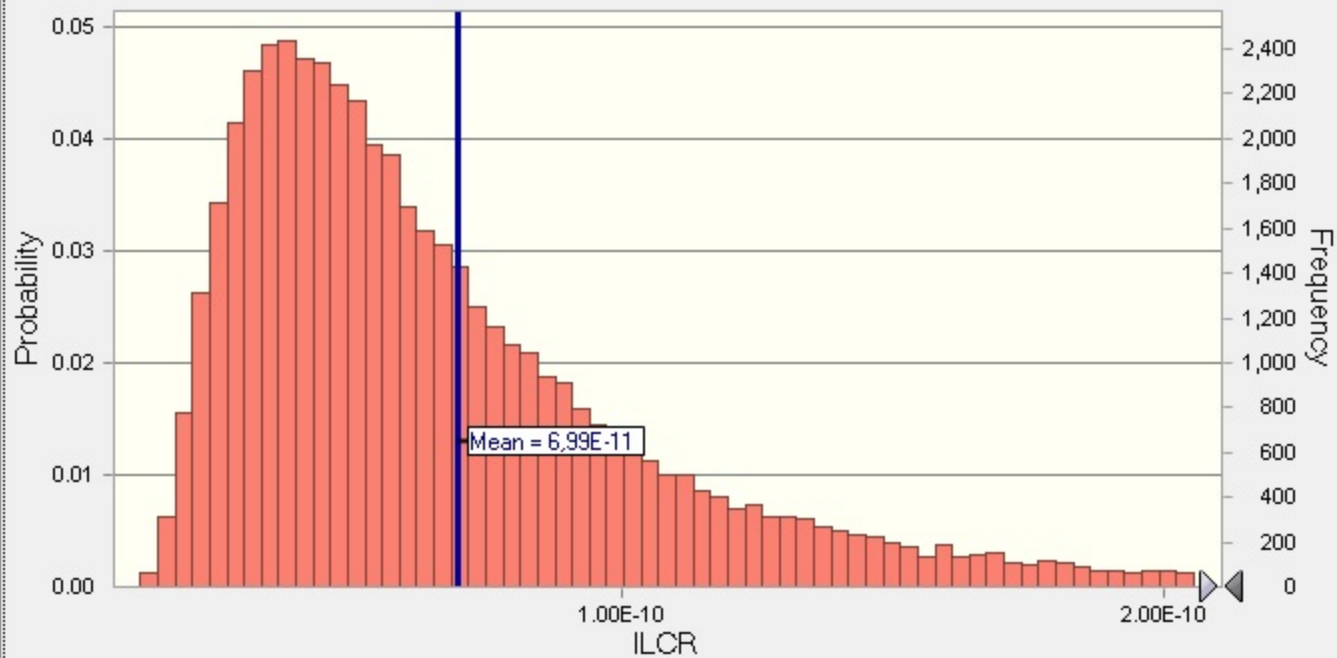
∞

50,000 Trials

Frequency View

48,930 Displayed

ILCR Cd Adult



1,00E-6

Certainty:

0,000

%

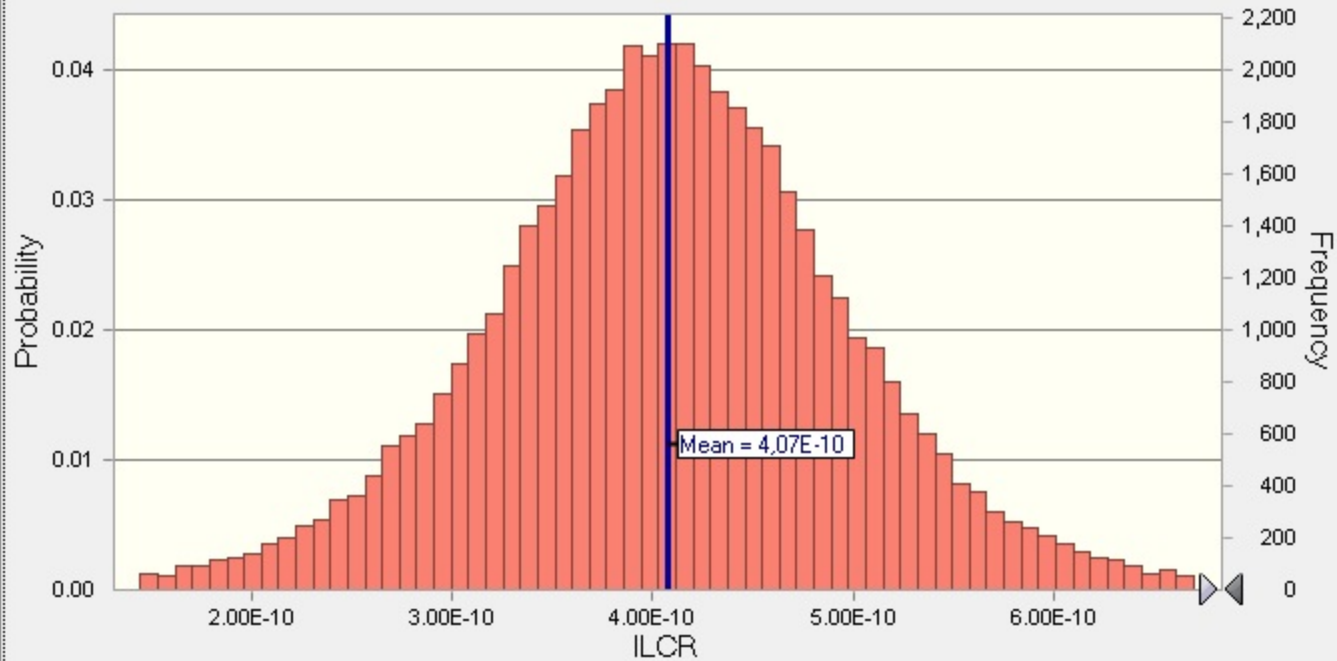
∞

50,000 Trials

Frequency View

49,385 Displayed

ILCR Co Adult



1,00E-6

Certainty:

0,000

%

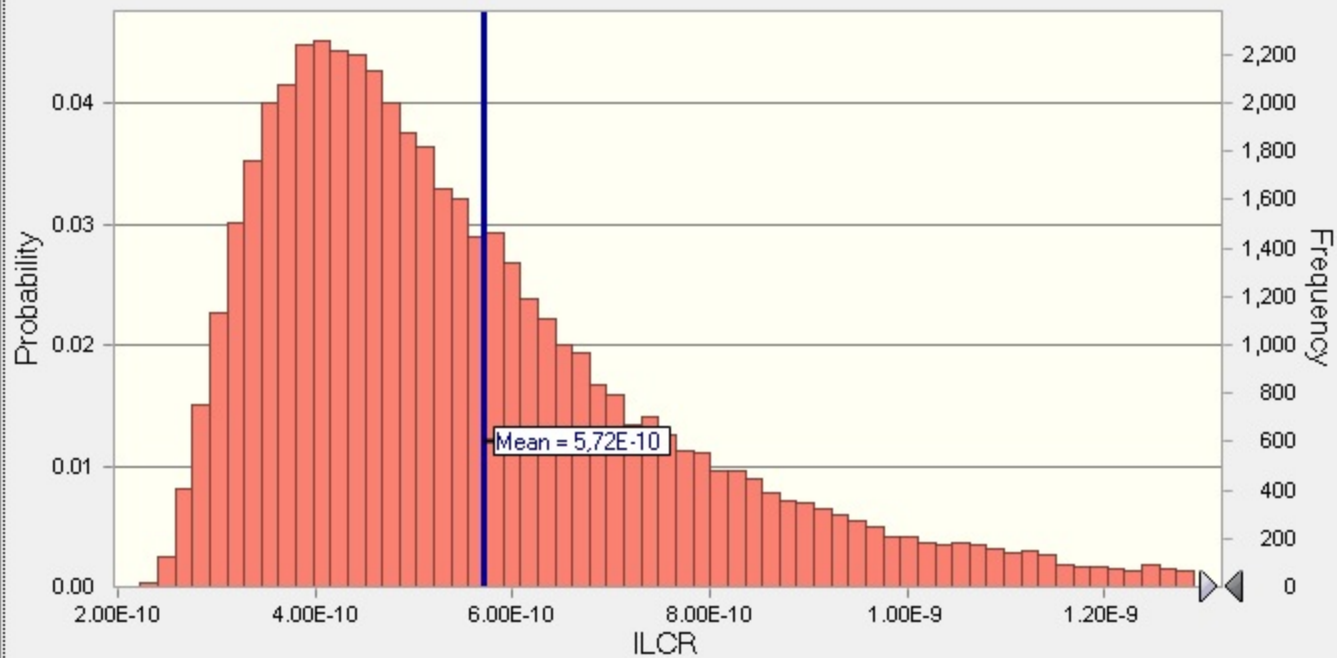
∞

50,000 Trials

Frequency View

48,936 Displayed

ILCR Cr Adult



1,00E-6

Certainty:

0,000

%

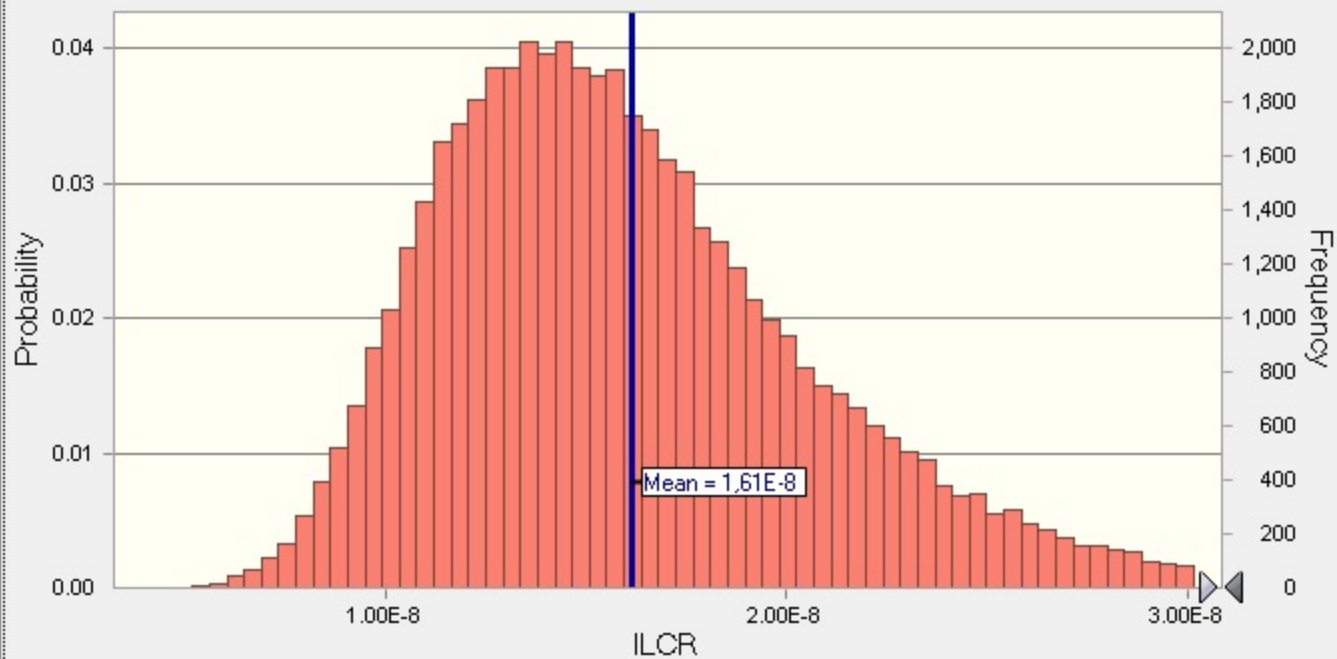
∞

50,000 Trials

Frequency View

49,252 Displayed

ILCR Ni Adult



1,00E-6

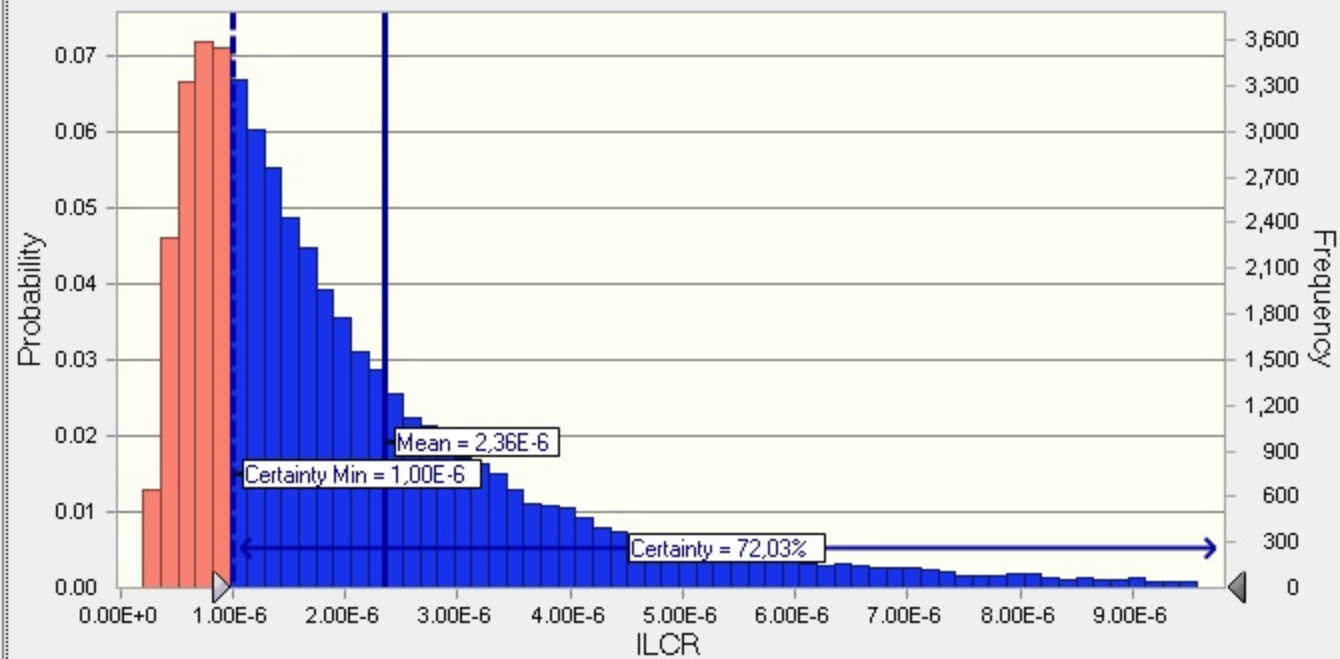
Certainty:

0,000

%

∞

ILCR Pb Adult



1,00E-6

Certainty: 72,026

%

∞

ILCRs INGESTION CHILDREN

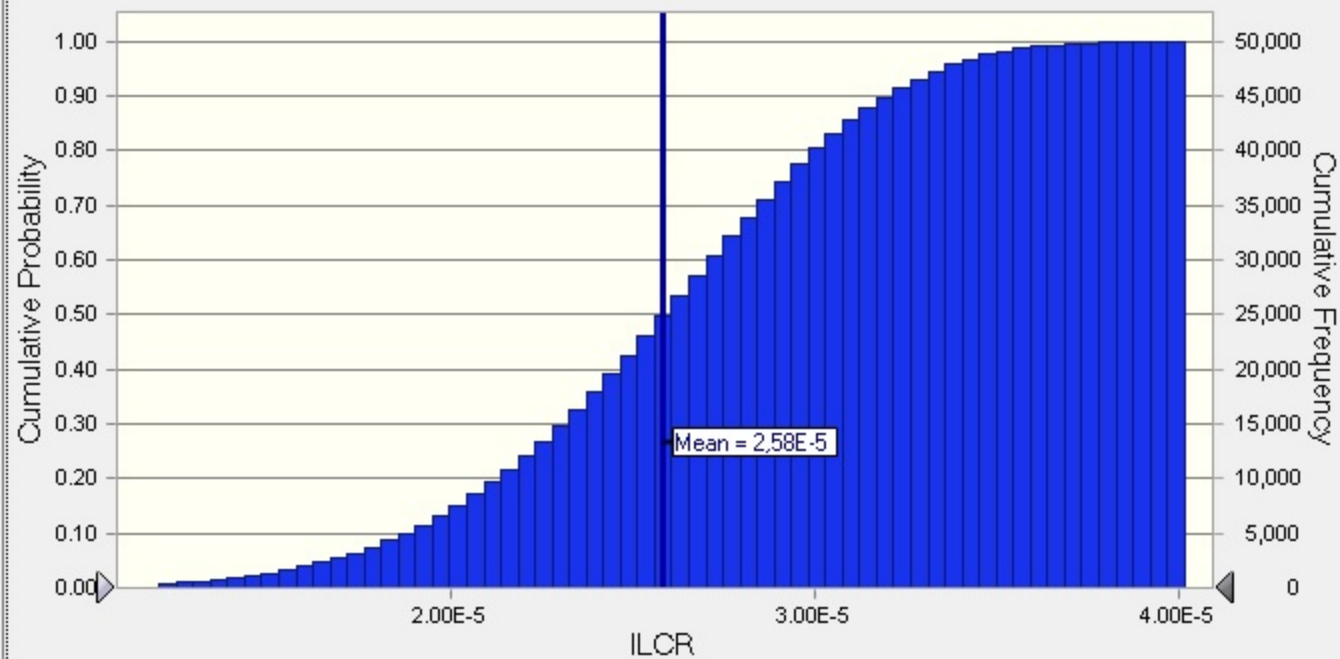
ILCR ingestion - Child		
Element	As	Pb
Level of certainty	100.00%	18.63%
Mean	2.58E-05	6.89E-07
Median	2.61E-05	4.65E-07
Min	5.49E-06	6.51E-08
Max	4.27E-05	2.81E-05
St. Dev.	5.12E-06	7.48E-07

50,000 Trials

Cumulative Frequency View

49,764 Displayed

ILCR - As - Ingestion - Child

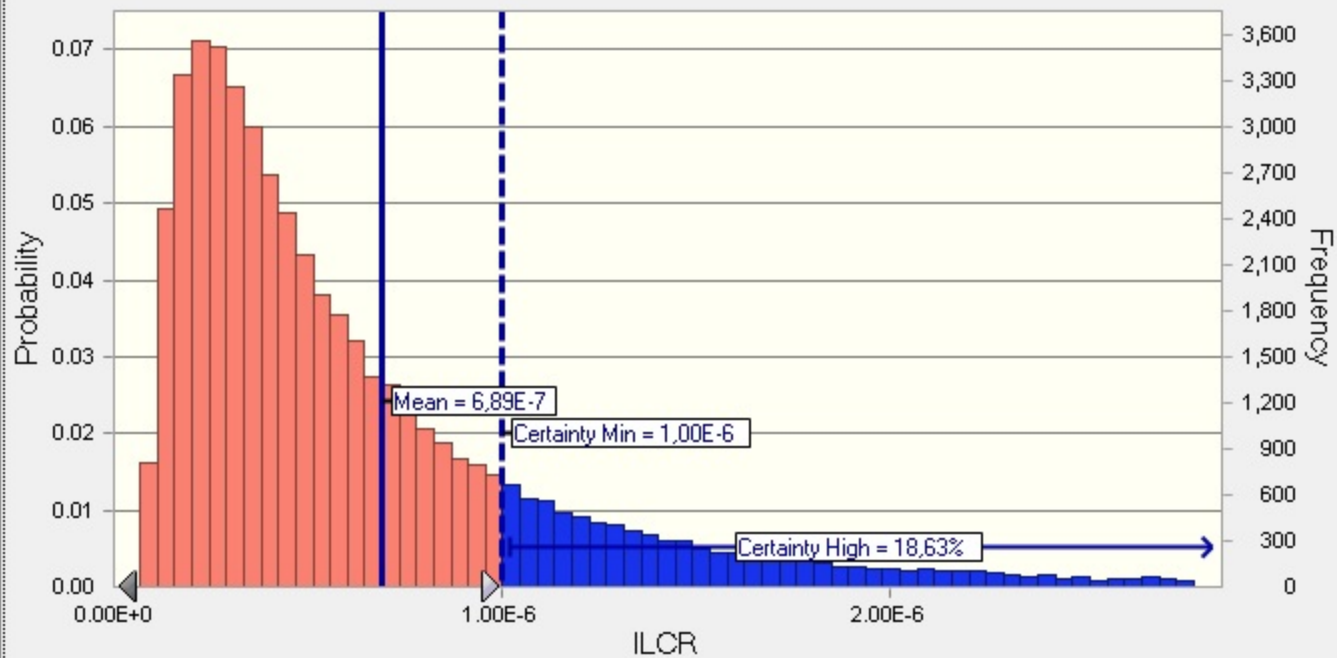
 $1.00E-6$

Certainty: 100,000

%

∞

Pb - ILCR - Ing - Child



1,00E-6

Certainty: 18,630

%

.00