

Johnson & Johnson

Adult Dusting
New Brunswick, N.J.
February 15, 1977
File #175

Subject: Respirable Talc Studies
Project 0503.01

TO: Mr. G. Lee

The data submitted by Mr. Russell in his February 8, 1977 report on the above subject based on usage by 20 individuals have been employed for computing safety factors for the Battelle Studies as requested, but the computations have been performed on a somewhat different basis from that employed in the infant studies.

You will recall that previously reported factors were based on weekly exposures of both the hamsters and infants. Since I have no data on frequency of adult dusting on a weekly basis, the safety factors in the following table were based on one dusting per week. These factors, however, can easily be converted to "n" dustings per week by dividing by "n", where n = the median number of weekly dustings.

Hamster Group No.	Weekly Hamster Exposure mg-hrs/m ³	Hamster Exposure Expressed as Multiples of Adult Exposure Based on 1 Dusting per Week	
		Using 50th Percentile	Using 95th Percentile
1	2	73	11
2	20	730	107
3	100	3640	535
4	20	730	107
5	100	3640	535

The above factors were based on the data in column 6 of Appendix I labeled "Respirable Mass Collected, Micrograms," since the total respirable mass collected corresponds numerically to the time-weighted average exposure expressed in mg-mins/m³. These data are summarized below:

Maximum	11.2	(95th percentile)
Minimum	0.2	
Average	2.32	
Std. Dev.	2.52	
Median	1.65	(50th percentile)
No. Observations	20	(10 males, 10 females)

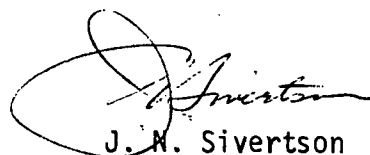
95 percent of the underlying population may be expected to be less 11.2 with a confidence of 86 percent.

Converting the 50th percentile value of 1.65 mg-mins/m³ exposure to a once-a-week dusting gives $1.65/60 = 0.0275$ mg-hrs/m³/week. Likewise the 95th percentile converts to $11.2/60 = 0.187$ mg-hrs/m³/week.

Dividing the weekly hamster exposure values by these two quantities yields the corresponding safety factors shown above. The tabulation below displays safety factors corresponding to a selection of weekly dusting frequencies:

Hamster Group No.	No. Weekly Dustings:	Safety Factors Based on							
		50th Percentile				95th Percentile			
		<u>3</u>	<u>5</u>	<u>7</u>	<u>9</u>	<u>3</u>	<u>5</u>	<u>7</u>	<u>9</u>
1		24	15	10	8	4	2	1.6	1.2
2		243	146	104	81	36	21	15	12
3		1210	728	520	404	178	107	76	59
4		243	146	104	81	36	21	15	12
5		1210	728	520	404	178	107	76	59

Please call me if you have any further questions.


J. N. Sivertson

/jdm

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