$n = p_1^{a_1} p_2^{a_2} \ldots p_t^{a_t}$ with $p_1, \ldots, p_t$ distinct primes and $p_1 > \ldots > p_t$.

- $p_1 \geqslant 10\,000\,019$ from Jenkins [5], improving on Hagis and Cohen [10]
- $p_2 \geqslant 10\,007$ from Iannucci [9], improving on Pomerance [19]
- $p_3 \geqslant 101$ from Iannucci [7]
- $p_{t-i} < 2^{2^i}(t-i)$ for $1 \leqslant i \leqslant 5$ from Kishore [16]
- $p_t < \frac{2}{3}t + 2$ from Perisastri [24]
- $p_k^{a_k} > 10^{20}$ for some k from Cohen [13], improving on Muskat [23]
- $n > 10^{300}$ from Brent, et. al. [11], improving on Brent and Cohen [12]
- $n \equiv 1, 9, 13, 25 \pmod{36}$ from Touchard [25]
- $n < 2^{4^t}$ from Nielsen [6], improving on Cook [8]
- $\Omega(n) = a_1 + a_2 + \ldots + a_t \geqslant 63$ from Hare [1][2], improving on Iannucci and Sorli [4]
- $\omega(n) = t \geqslant 8$ from Hagis [18][1], improving on Pomerance [20]
- $\omega(n) = t \geqslant 11$ if $p_t > 3$ from both Hagis [14] and Kishore [15]

Suryanarayana and Hagis [22] showed that in all cases $0.596 < \sum_{p|n} \frac{1}{p} < 0.694$. Their paper has more precise bounds based on the divisibility of n by 3 and 5. Cohen [17] gives stricter ranges for the same sum.

References

[1] The total number of prime factors of an odd perfect number exceeds 63
Kevin G. Hare
Mathematics of Computation, preprint received November 2004.

[2] More on the total number of prime factors of an odd perfect number
Kevin G. Hare
Mathematics of Computation, Vol. 74, No. 250? (2005), preprint received December 2003, S0025-5718-03-01522-9

[3] Sylvester: Ushering in the modern era of research on odd perfect numbers
Steven Gimbal; John H. Jaroma
INTEGERS: Electronic Journal of Combinatorial Number Theory, Vol. 3 (2003), #A16, MR 2004k:01034

[4] On the total number of prime factors of an odd perfect number
Douglas E. Iannucci; Ronald M. Sorli
Mathematics of Computation, Vol. 72, No. 244 (2003), pp. 2077-2084, S0025-5718-03-01522-9

[5] Odd perfect numbers have a prime factor exceeding 10^7
Paul M. Jenkins
Mathematics of Computation, Vol. 72, No. 243 (2003), pp. 1549-1554, S0025-5718-03-01496-0

[1] E. Z. Chein's Ph.D thesis came to this conclusion one year earlier, but Hagis and most of the mathematical community were unaware of the result until after Hagis' proof.

[6] An upper bound for odd perfect numbers
Pace P. Nielsen
INTEGERS: Electronic Journal of Combinatorial Number Theory, Vol. 3 (2003), #A14, MR 2004k:11009

[7] The third largest prime divisor of an odd perfect number exceeds one hundred
Douglas E. Iannucci
Mathematics of Computation, Vol. 69, No. 230 (2000), pp. 867-879, MR 2000i:11201

[8] Bounds for odd perfect numbers
Roger J. Cook
Number Theory (Ottawa, ON, 1996), pp. 67-71, *CRM Proceedings & Lecture Notes*, No. 19, American Mathematical Society (1999), MR 2000d:11010

[9] The second largest prime divisor of an odd perfect number exceeds ten thousand
Douglas E. Iannucci
Mathematics of Computation, Vol. 68, No. 228 (1999), pp. 1749-1760, MR 2000i:11200

[10] Every Odd Perfect Number has a Prime Factor Which Exceeds 10^6
Peter Hagis, Jr.; Graeme L. Cohen
Mathematics of Computation, Vol. 67, No. 223 (Jul., 1998), pp. 1323-1330, S0025-5718-98-00982-X

[11] Improved techniques for lower bounds for odd perfect numbers
Richard P. Brent, Graeme L. Cohen and Herman J. J. te Riele
Mathematics of Computation, Vol. 57, No. 196 (Oct., 1991), pp. 857-868, MR 92c:11004

[12] A new lower bound for odd perfect numbers (with supplement)
Richard P. Brent and Graeme L. Cohen
Mathematics of Computation, Vol. 53, No. 187 (Jul., 1989), pp. 431-437

[13] On the largest component of an odd perfect number
Graeme L. Cohen
Journal of the Australian Mathematical Society, Vol. 42 (1987), No. 2, pp. 280-286, MR 87m:11005

[14] Sketch of a Proof that an Odd Perfect Number Relatively Prime to 3 has at Least Eleven Prime Factors
Peter Hagis, Jr.
Mathematics of Computation, Vol. 40, No. 161 (Jan., 1983), pp. 399-404.

[15] Odd Perfect Numbers Not Divisible by 3. II
Masao Kishore
Mathematics of Computation, Vol. 40, No. 161 (Jan., 1983), pp. 405-411.

[16] On odd perfect, quasiperfect, and odd almost perfect numbers
Masao Kishore
Mathematics of Computation, Vol. 36, No. 154 (Apr., 1981), pp. 583-586, MR 82h:10006

[17] On odd perfect numbers. II. Multiperfect numbers and quasiperfect numbers.
Graeme L. Cohen
Journal of the Australian Mathematical Society, Vol. 29 (1980), No. 3, pp. 369-384, MR 81m:10009

[18] Outline of a Proof that Every Odd Perfect Number has at Least Eight Prime Factors
Peter Hagis, Jr
Mathematics of Computation, Vol. 35, No. 151 (Jul., 1980), pp. 1027-1032.

[19] The Second Largest Prime Factor of an Odd Perfect Number
Carl Pomerance
Mathematics of Computation, Vol. 29, No. 131 (Jul., 1975), pp. 914-921.

[20] Odd perfect numbers are divisible by at least seven distinct primes
Carl Pomerance
Acta Arithmetica, Vol. 25 (1974), pp. 265-300.

[21] The non-existence of odd perfect numbers of a certain form
Wayne L. McDaniel
Archiv Der Mathematik, Vol. 21 (1970), pp. 52-53, MR 41:3369

[22] A theorem concerning odd perfect numbers
D. Suryanarayana; Peter Hagis, Jr.
Fibonacci Quarterly, Vol. 8, No. 4 (1970), pp. 337-346, 374, MR0271012

[23] On divisors of odd perfect numbers
Joseph B. Muskat
Mathematics of Computation, Vol. 20, No. 93 (Jan., 1966), pp. 141-144.

[24] A note on odd perfect numbers
M. Perisastri
The Mathematics Student, Vol. 26 (1958) pp. 179-181, MR0115963

[25] On prime numbers and perfect numbers
Jacques Touchard
Scripta Mathematica, Vol. 19 (1953), pp. 35-39, MR0055362 (14,1063b)