TABLE IIIE-1 EXPONTENTIAL INTERGRALS

Finite Limit	Infinite Limit	
$\int_0^x x^2 e^{-x^2} dx$	$n = 0, 2, 4, \cdot, \cdot$	$n = 1, 3, 5, \cdot, \cdot$
0	$\int_0^\infty x^n e^{-x^2} dx = \left(\frac{n-1}{2}\right)\left(\frac{n-3}{2}\right) \cdots \frac{1}{2}\frac{\sqrt{\pi}}{2}$	$\int_0^\infty x^n e^{-x^2} dx = \frac{1}{2}\left(\frac{n-1}{2}\right)!$
0.0016		
0.0194		
0.0583	$\int_0^\infty e^{-x^2} = \frac{\sqrt{\pi}}{2}$	$\int_0^\infty x\, e^{-x^2} dx = \frac{1}{2}$
0.1179		
0.1895		
0.2612		
0.3234	$\int_0^\infty x^2 e^{-x^2} dx = \frac{\sqrt{\pi}}{4}$	$\int_0^\infty x^3 e^{-x^2} dx = \frac{1}{2}$
0.3708		
0.4030		
0.4227		
0.4336	$\int_0^\infty x^4 e^{-x^2} dx = \frac{3\sqrt{\pi}}{8}$	$\int_0^\infty x^5 e^{-x^2} dx = 1$
0.4390		
0.4410		
$\sqrt{\pi}/4$		
	$\int_{-\infty}^\infty x^n e^{-x^2} dx = 2\int_0^\infty x^n e^{-x^2} dx$	$\int_{-\infty}^\infty x^n e^{-x^2} dx = 0$

TABLE IIIE-2. COLLISION CROSS SECTIONS

Substance	Symbol	d^+(Å)	$\sigma^+[(Å)^2]$
Helium	He	2.18	14.9
Neon	Ne	2.59	21.1
Argon	Ar	3.64	41.6
Krypton	Kr	4.16	54.4
Xenon	Xe	4.85	73.9
Mercury	Hg	4.26	57.0
Hydrogen	H_2	2.74	23.6
Nitrogen	N_2	3.75	44.2
Oxygen	O_2	3.61	40.9
Hydrogen chloride	HCl	4.46	62.5
Carbon dioxide	CO_2	4.59	66.2
Water	H_2O	4.60	66.5
Ammonia	NH_3	4.43	61.7
Methane	CH_4	4.14	53.8
Ethylene	C_2H_4	4.95	77.0
Ethane	C_2H_6	5.30	88.2

Extracted from Kennard, E. H., Kinetic Theory of Gases, McGraw Hill (1938).