

Supporting Information

Atmospheric Degradation Initiated by OH radicals of the Potential Foam Expansion Agent, $\text{CF}_3(\text{CF}_2)_2\text{CH}=\text{CH}_2$ (HFC-1447fz): Kinetics and Formation of Gaseous Products and Secondary Organic Aerosols

Elena Jiménez^{a,b,*}, Sergio González^a, Mathieu Cazaunau^{c,†}, Hui Chen^c, Bernabé Ballesteros^{a,b}, Véronique Daële,^c José Albaladejo^{a,b}, and Abdelwahid Mellouki^{c,*}

Table of Contents

66 Pages

4 Tables

5 Figures

* Corresponding authors: 34 926 29 53 00 Ext. 3455, Elena.Jimenez@uclm.es; 33 238257612 mellouki@cnrs-orleans.fr

† Current address: CNRS – ICARE, 1C, avenue de la Recherche Scientifique CS 50060, 45071 Orléans cedex 2 France

EXPERIMENTAL, METHODOLOGY AND DATA ANALYSIS

EXPERIMENTAL

Pressure measurements. In the UCLM experimental setups, partial pressures of HFC-1447fz were measured using 10-Torr capacitance transducer and $p_{T,\text{bulb}}$ was measured with a 10 and 1000-Torr capacitance manometers (Leybold, CERAVAC CTR-100). In ICARE-CNRS, two pressure sensors (0-10 and 0-100 Torr, MKS Baratron) are connected to the calibrated cylinder.

Photochemical precursors of OH radicals.

Kinetic studies. The OH-precursor (H_2O_2 and HNO_3 in aqueous solution) was placed in a glass bubbler and He was flowed through it to introduce its vapor pressure in the reaction cell. As vapor pressure of H_2O is greater than that of H_2O_2 , a pre-concentration treatment was possible by bubbling He through the aqueous solution prior to use for several days as described by Jiménez et al.¹⁰ Nitric acid is commercially available as an azeotrope at 65% mass. In the case of HNO_3 , its vapor pressure is higher than that of water and no pre-concentration treatment was necessary. The glass bubbler containing HNO_3 was kept in an ice-water bath to reduce its vapor pressure. The freezing point of HNO_3 is much lower than H_2O_2 . For that reason, HNO_3 was used as an OH-precursor at temperatures lower than 5°C and H_2O_2 was restricted to temperatures above 5°C.

The upper limit for the OH-precursor concentration ($[\text{H}_2\text{O}_2] < (0.7-1.2) \times 10^{14} \text{ molecule cm}^{-3}$ and $[\text{HNO}_3] < (0.8-4.8) \times 10^{15} \text{ molecule cm}^{-3}$) was obtained from the analysis of the OH temporal profiles recorded in the absence of reactant using the method described in Albaladejo et al.¹³ The calculated $[\text{OH}]_0$ from OH-precursor concentration and the photolysis laser fluence was lower than

$(0.7\text{--}7.0) \times 10^{11}$ molecule cm⁻³. This low concentration ensures that unwanted complications from secondary radical-radical reactions is negligible.

Product studies. Two different OH precursors were used in the product studies. In the presence of added NO_x, the chemical system CH₃ONO/NO/air was used as the photochemical OH precursor:



While in the absence of added NO_x, continuous photolysis of H₂O₂ was used as OH-precursor:



H₂O₂(aq) was introduced by an impinger (injected volume 1 mL).

Reagents. He (Praxair, 99.999 %), synthetic air and NO (1% in N₂) were used as supplied without further purification. Two samples (gas and liquid) of CF₃(CF₂)₂CH=CH₂ were used and supplied from Apollo Scientific Ltd. with a purity of 97%. CH₃ONO was synthesized by drop-wise addition of concentrated H₂SO₄ to a saturated solution of NaNO₂ in methanol. Gaseous HFC-1447fz was used as supplied, while liquid HFC-1447fz was degassed by repeated freeze-thaw-pumped cycles. To verify if impurities were present in the HFC-1447fz sample, the gas chromatography-mass spectrometry/ flame ionization detection (GC-MS/ FID) analysis was carried out. In both samples, the GC-MS/ FID analysis indicated that no significant amount of impurities was present.

METHODOLOGY AND DATA ANALYSIS

Ultraviolet (UV) and Fourier Transform Infrared (FTIR) Spectroscopy. The UV and IR absorption spectrum of HFC-1447fz was measured by recording the transmitted light in the absence

(I_0) and presence (I) of absorber as a function of wavelength (λ) or wavenumber (ν), respectively.

The absorbance at a given λ or ν , A_λ and A_ν , respectively is calculated from the I/I_0 ratio.

Absorbance in the IR region is usually obtained in decimal base, but they are converted to absorbance in base e . For ease of presentation the subscripts λ and ν are omitted hereafter and the absorbances are expressed in base e :

$$A = -\ln\left\{\frac{I}{I_0}\right\} \quad (\text{E1})$$

Based on the Beer-Lambert law, the absorption cross sections, σ , at each λ (in the UV region) or ν (in the IR region) were obtained from the slope of A versus [HFC-1447fz] plots:

$$A = \sigma\ell[\text{HFC} - 1447\text{fz}] \quad (\text{EII})$$

Where ℓ is the optical path length (107 cm for UV measurements and 10 cm or 700 cm for IR measurements). In addition, for the calculation of the *GWP* (see Discussion section) for HFC-1447fz, the integrated IR absorption cross sections, S_{int} , at intervals of 10 cm^{-1} were obtained from the recorded spectra by applying the Beer-Lambert law in its integrated form:

$$A_{\text{int}} = \int_{\nu_1}^{\nu_2} A_\nu d\nu = S_{\text{int}} \ell [\text{HFC-1447fz}] \quad (\text{EIII})$$

where A_{int} is the integrated absorbance between ν_1 and ν_2 .

Kinetic Data Analysis. Kinetic measurements of the rate coefficient $k_{\text{OH}}(T)$ were made under *pseudo*-first order conditions in the OH radical, over the entire temperature and pressure range. The OH loss in the reactor is attributed to reaction with HFC-1447fz, to the reaction with the OH-precursor (k_{prec}) and to other first-order loss processes such as diffusion out of the detection zone ($k_{\text{other losses}}$):



The loss of OH in the absence of reactant is only attributed to reactions (V) and (VI). Under the pseudo-first order conditions, the temporal profile of the LIF signal from OH radicals followed a simple exponential rate law. The non-linear regression analysis of such decays yields the pseudo-first order rate coefficient, k' , for a given [HFC-1447fz], [OH-Precursor], T and $p_{\text{T,cell}}$. In the absence of HFC, $k' = k_0 = (k_{\text{prec}}(T)[\text{OH-Precursor}] + k_{\text{other losses}})$:

$$k' = k_{\text{OH}}(T) [\text{HFC-1447fz}] + k_0 \quad (\text{EIV})$$

$k_{\text{OH}}(T)$ was, then, obtained from the slope of the plot of k' vs [HFC-1447fz]. Therefore, it is essential to accurately known [HFC-1447fz]. The measurement of [HFC-1447fz] was made (i) by using calibrated mass flows (diluted HFC flow rate, F_{HFC} , and the total gas flow rate, F_{T}), the total pressure ($p_{\text{T,cell}}$) and temperature in the reaction cell and (ii) optically by online FTIR measurements, as described above.

In both cases, all gases were introduced in the reaction cell by means of calibrated mass flow controllers: Helium (Sierra Instruments Inc., model SmartTrack 0-14 sccm, standard cm³ per minute) through the bubbler containing the OH-precursor in solution, HFC-1447fz (Qualiflow, AFC 50.00 0-10 sccm), and main helium (Sierra Instruments Inc., model SmartTrack 0-500 sccm). F_{T} ranged from 269 to 460 sccm, while F_{HFC} ranged from 1 to 13 sccm.

Global warming potential calculation. For a time horizon of 100 years, GWP of HFC-1447fz relative to CO₂ (the reference gas), $GWP_{100-\text{yr}}$, is calculated using equation (EV):^{S1}

$$GWP_{100-\text{yr}} = \frac{RE \tau (1 - \exp(-100\text{yr}/\tau))}{AGWR(CO_2)} \quad (\text{EV})$$

where RE is the radiative efficiency due to a unit increase in atmospheric abundance of the gas (in $\text{W m}^{-2} \text{ kg}^{-1}$) and $AGWP(\text{CO}_2)$ is the absolute GWP of CO_2 for the same time horizon, $9.171 \times 10^{-14} \text{ W m}^{-2} \text{ yr (kg CO}_2)^{-1}$.¹ Generally, the instantaneous RE for halocarbons is calculated for a 0-1 ppbv increase in mixing ratio (in $\text{W m}^{-2} \text{ ppbv}^{-1}$) from the integrated IR absorption cross sections between 500 and 2500 cm^{-1} by using the narrow-band model by Pinnock et al.^{S2} for a global and annual mean atmosphere:

$$RE = \sum_{500\text{cm}^{-1}}^{2500\text{cm}^{-1}} S_{\text{int}} F^\sigma \quad (\text{EVI})$$

where F^σ (in $\text{W m}^{-2} (\text{cm}^{-1})^{-1} (\text{cm}^2 \text{ molecule}^{-1})^{-1}$) is the radiative efficiency per absorption cross section unit parameterized in 10- cm^{-1} intervals.^{S2}

References

- (S1) Forster, P.; et al. Changes in atmospheric constituents and in radiative forcing. In: Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon S, Qin D, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M.Tignor and H.L. Miller (eds.)]. Cambridge University Press **2007**, Cambridge, United Kingdom and New York, NY, (USA).
- (S2) Pinnock, S.; Hurley, M. D.; Shine, K. P.; Wallington, T. J.; Smyth, T. J. Radiative forcing of climate by hydrochlorofluorocarbons and hydrofluorocarbons. *J. Geophys. Res.* **1995**, *100*, 23227-23238.

Table S1. Absolute UV absorption cross sections (base e) for $\text{CF}_3(\text{CF}_2)_2\text{CH}=\text{CH}_2$ at room temperature.

λ/nm	$\sigma_\lambda/\text{cm}^2$	Standard Deviation/ cm^2
191.3	3.52E-20	1.86E-21
192.3	2.21E-20	6.29E-22
193.3	1.90E-20	5.03E-22
194.3	1.41E-20	5.69E-22
195.3	1.10E-20	3.18E-22
196.3	8.47E-21	1.49E-22
197.3	6.96E-21	1.37E-22
198.3	5.73E-21	1.87E-22
199.3	5.15E-21	1.68E-22
200.3	4.72E-21	2.03E-22
201.3	4.46E-21	1.88E-22
202.3	4.14E-21	1.68E-22
203.3	3.99E-21	1.62E-22
204.3	3.83E-21	1.66E-22
205.3	3.56E-21	1.67E-22
206.3	3.44E-21	1.78E-22
207.3	3.26E-21	1.78E-22
208.3	3.10E-21	3.32E-22
209.3	2.59E-21	2.72E-22
210.3	2.10E-21	1.75E-22
211.3	2.02E-21	2.93E-22
212.3	1.79E-21	2.72E-22
213.3	1.43E-21	3.02E-22
214.3	9.72E-22	1.23E-22
215.3	7.45E-22	1.39E-22
216.3	7.19E-22	2.22E-22
217.3	5.70E-22	2.57E-22
218.3	5.20E-22	1.91E-22
219.3	4.21E-22	2.02E-22
220.3	3.91E-22	1.94E-22
221.3	3.92E-22	2.48E-22
222.3	3.12E-22	1.06E-22
223.3	2.33E-22	7.40E-23
224.3	2.16E-22	8.23E-23
225.3	2.26E-22	1.12E-22

Table S2. Absolute IR absorption cross sections (base e) for $\text{CF}_3(\text{CF}_2)_2\text{CH}=\text{CH}_2$ at room temperature.

Wavenumber/ cm^{-1}	IR Absorption Cross Section / cm^2	Standard Deviation/ cm^2
2000.00	4.24E-21	7.14E-22
1999.51	4.17E-21	5.68E-22
1999.03	4.24E-21	5.29E-22
1998.55	4.40E-21	5.78E-22
1998.07	4.49E-21	6.30E-22
1997.59	4.37E-21	6.85E-22
1997.10	4.21E-21	8.45E-22
1996.62	4.09E-21	8.51E-22
1996.14	4.08E-21	6.19E-22
1995.66	4.28E-21	3.94E-22
1995.17	4.48E-21	5.17E-22
1994.69	4.53E-21	4.82E-22
1994.21	4.40E-21	5.58E-22
1993.73	4.39E-21	7.14E-22
1993.25	4.61E-21	5.60E-22
1992.76	4.78E-21	5.98E-22
1992.28	4.84E-21	6.79E-22
1991.80	4.93E-21	6.80E-22
1991.32	4.83E-21	6.52E-22
1990.83	4.69E-21	7.12E-22
1990.35	4.52E-21	8.25E-22
1989.87	4.56E-21	7.46E-22
1989.39	4.65E-21	6.57E-22
1988.91	4.70E-21	6.17E-22
1988.42	4.69E-21	7.55E-22
1987.94	4.60E-21	7.42E-22
1987.46	4.56E-21	5.78E-22
1986.98	4.48E-21	6.13E-22
1986.50	4.36E-21	7.98E-22
1986.01	4.37E-21	8.89E-22
1985.53	4.43E-21	9.63E-22
1985.05	4.46E-21	9.27E-22
1984.57	4.59E-21	6.46E-22
1984.08	4.73E-21	6.29E-22
1983.60	4.61E-21	6.36E-22
1983.12	4.38E-21	7.50E-22
1982.64	4.30E-21	7.97E-22
1982.16	4.27E-21	7.80E-22
1981.67	4.05E-21	7.56E-22
1981.19	3.84E-21	7.28E-22
1980.71	3.76E-21	8.00E-22
1980.23	3.87E-21	8.40E-22
1979.75	3.81E-21	9.14E-22
1979.26	3.78E-21	8.51E-22
1978.78	3.79E-21	8.32E-22
1978.30	3.71E-21	7.36E-22
1977.82	3.54E-21	6.01E-22
1977.33	3.40E-21	5.46E-22
1976.85	3.29E-21	6.08E-22
1976.37	3.25E-21	6.83E-22
1975.89	3.22E-21	7.42E-22
1975.41	3.17E-21	8.33E-22
1974.92	3.10E-21	8.98E-22
1974.44	3.16E-21	8.31E-22
1973.96	3.22E-21	6.40E-22

1973.48	3.18E-21	4.27E-22
1972.99	3.12E-21	3.51E-22
1972.51	3.12E-21	5.15E-22
1972.03	3.14E-21	6.06E-22
1971.55	3.32E-21	5.95E-22
1971.07	3.44E-21	5.57E-22
1970.58	3.41E-21	4.10E-22
1970.10	3.28E-21	3.90E-22
1969.62	3.20E-21	5.52E-22
1969.14	3.28E-21	7.18E-22
1968.66	3.46E-21	7.80E-22
1968.17	3.63E-21	6.76E-22
1967.69	3.62E-21	7.56E-22
1967.21	3.48E-21	1.22E-21
1966.73	3.60E-21	1.24E-21
1966.24	3.81E-21	1.01E-21
1965.76	3.97E-21	8.09E-22
1965.28	4.10E-21	7.60E-22
1964.80	4.38E-21	5.80E-22
1964.32	4.64E-21	5.66E-22
1963.83	4.73E-21	6.00E-22
1963.35	4.80E-21	5.92E-22
1962.87	4.95E-21	5.40E-22
1962.39	5.15E-21	4.75E-22
1961.91	5.31E-21	4.73E-22
1961.42	5.39E-21	5.22E-22
1960.94	5.60E-21	6.03E-22
1960.46	5.80E-21	7.16E-22
1959.98	5.89E-21	9.12E-22
1959.49	6.06E-21	7.77E-22
1959.01	5.98E-21	6.16E-22
1958.53	5.77E-21	6.16E-22
1958.05	5.72E-21	7.89E-22
1957.57	6.01E-21	8.27E-22
1957.08	6.32E-21	7.27E-22
1956.60	6.36E-21	8.06E-22
1956.12	6.22E-21	1.03E-21
1955.64	6.04E-21	1.08E-21
1955.16	5.87E-21	1.06E-21
1954.67	5.75E-21	1.09E-21
1954.19	5.70E-21	1.19E-21
1953.71	5.86E-21	9.54E-22
1953.23	6.08E-21	6.51E-22
1952.74	6.13E-21	5.63E-22
1952.26	6.12E-21	6.55E-22
1951.78	6.03E-21	7.09E-22
1951.30	5.84E-21	7.57E-22
1950.82	5.70E-21	9.66E-22
1950.33	5.61E-21	9.89E-22
1949.85	5.54E-21	9.42E-22
1949.37	5.50E-21	8.06E-22
1948.89	5.56E-21	6.05E-22
1948.40	5.78E-21	3.97E-22
1947.92	5.99E-21	4.54E-22
1947.44	5.92E-21	5.17E-22
1946.96	5.72E-21	6.06E-22
1946.48	5.54E-21	5.84E-22
1945.99	5.50E-21	6.83E-22
1945.51	5.46E-21	9.43E-22
1945.03	5.30E-21	1.15E-21
1944.55	5.31E-21	7.16E-22
1944.07	5.36E-21	2.98E-22

1943.58	5.44E-21	3.12E-22
1943.10	5.50E-21	7.55E-22
1942.62	5.69E-21	1.15E-21
1942.14	5.87E-21	1.17E-21
1941.65	6.04E-21	9.61E-22
1941.17	6.26E-21	7.46E-22
1940.69	6.47E-21	6.18E-22
1940.21	6.55E-21	6.17E-22
1939.73	6.72E-21	9.27E-22
1939.24	7.20E-21	1.11E-21
1938.76	7.89E-21	8.76E-22
1938.28	8.54E-21	6.63E-22
1937.80	9.25E-21	7.29E-22
1937.32	1.01E-20	1.09E-21
1936.83	1.12E-20	1.40E-21
1936.35	1.23E-20	1.26E-21
1935.87	1.38E-20	6.41E-22
1935.39	1.53E-20	4.09E-22
1934.90	1.66E-20	4.68E-22
1934.42	1.76E-20	5.57E-22
1933.94	1.85E-20	9.33E-22
1933.46	1.94E-20	1.07E-21
1932.98	2.02E-20	8.49E-22
1932.49	2.07E-20	5.80E-22
1932.01	2.09E-20	6.60E-22
1931.53	2.10E-20	1.07E-21
1931.05	2.15E-20	1.36E-21
1930.56	2.25E-20	1.37E-21
1930.08	2.40E-20	1.03E-21
1929.60	2.53E-20	7.40E-22
1929.12	2.61E-20	5.50E-22
1928.64	2.64E-20	7.76E-22
1928.15	2.65E-20	1.09E-21
1927.67	2.66E-20	9.70E-22
1927.19	2.63E-20	6.82E-22
1926.71	2.57E-20	4.66E-22
1926.23	2.50E-20	4.34E-22
1925.74	2.42E-20	6.26E-22
1925.26	2.37E-20	5.75E-22
1924.78	2.33E-20	3.93E-22
1924.30	2.28E-20	4.91E-22
1923.81	2.23E-20	6.96E-22
1923.33	2.16E-20	9.52E-22
1922.85	2.06E-20	1.00E-21
1922.37	1.95E-20	9.91E-22
1921.89	1.86E-20	5.80E-22
1921.40	1.77E-20	7.36E-22
1920.92	1.67E-20	8.71E-22
1920.44	1.54E-20	5.75E-22
1919.96	1.41E-20	5.51E-22
1919.48	1.29E-20	5.53E-22
1918.99	1.19E-20	6.23E-22
1918.51	1.09E-20	9.89E-22
1918.03	9.80E-21	1.10E-21
1917.55	8.90E-21	7.58E-22
1917.06	8.46E-21	4.96E-22
1916.58	8.08E-21	7.03E-22
1916.10	7.56E-21	8.06E-22
1915.62	6.92E-21	6.62E-22
1915.14	6.29E-21	5.50E-22
1914.65	5.85E-21	5.19E-22
1914.17	5.46E-21	4.30E-22

1913.69	5.21E-21	3.46E-22
1913.21	5.05E-21	4.06E-22
1912.73	4.85E-21	4.46E-22
1912.24	4.62E-21	4.65E-22
1911.76	4.51E-21	5.97E-22
1911.28	4.39E-21	7.37E-22
1910.80	4.29E-21	8.04E-22
1910.31	4.01E-21	9.28E-22
1909.83	3.73E-21	1.00E-21
1909.35	3.51E-21	9.76E-22
1908.87	3.34E-21	1.13E-21
1908.39	3.26E-21	1.21E-21
1907.90	3.22E-21	9.80E-22
1907.42	3.19E-21	7.58E-22
1906.94	3.22E-21	7.23E-22
1906.46	3.36E-21	8.29E-22
1905.97	3.38E-21	9.57E-22
1905.49	3.22E-21	8.69E-22
1905.01	2.99E-21	7.11E-22
1904.53	2.87E-21	6.69E-22
1904.05	2.75E-21	5.76E-22
1903.56	2.50E-21	8.15E-22
1903.08	2.31E-21	1.16E-21
1902.60	2.32E-21	1.20E-21
1902.12	2.41E-21	1.05E-21
1901.64	2.37E-21	1.02E-21
1901.15	2.33E-21	9.37E-22
1900.67	2.29E-21	7.66E-22
1900.19	2.38E-21	6.34E-22
1899.71	2.53E-21	7.35E-22
1899.22	2.54E-21	7.98E-22
1898.74	2.43E-21	6.46E-22
1898.26	2.32E-21	4.97E-22
1897.78	2.22E-21	4.09E-22
1897.30	2.32E-21	5.22E-22
1896.81	2.49E-21	4.40E-22
1896.33	2.55E-21	5.56E-22
1895.85	2.50E-21	7.37E-22
1895.37	2.58E-21	9.14E-22
1894.89	2.62E-21	8.67E-22
1894.40	2.46E-21	6.62E-22
1893.92	2.38E-21	6.88E-22
1893.44	2.40E-21	8.59E-22
1892.96	2.44E-21	8.20E-22
1892.47	2.43E-21	6.50E-22
1891.99	2.39E-21	6.36E-22
1891.51	2.29E-21	1.00E-21
1891.03	2.50E-21	9.57E-22
1890.55	2.64E-21	8.98E-22
1890.06	2.59E-21	1.03E-21
1889.58	2.65E-21	1.05E-21
1889.10	2.81E-21	9.13E-22
1888.62	2.92E-21	7.72E-22
1888.13	2.92E-21	7.64E-22
1887.65	2.92E-21	7.16E-22
1887.17	2.91E-21	5.87E-22
1886.69	3.06E-21	7.20E-22
1886.21	3.30E-21	8.13E-22
1885.72	3.39E-21	8.74E-22
1885.24	3.25E-21	7.26E-22
1884.76	3.07E-21	5.88E-22
1884.28	3.03E-21	6.23E-22

1883.80	3.11E-21	6.23E-22
1883.31	3.13E-21	5.54E-22
1882.83	3.08E-21	5.32E-22
1882.35	3.03E-21	5.52E-22
1881.87	3.07E-21	4.55E-22
1881.38	3.09E-21	4.29E-22
1880.90	3.30E-21	3.90E-22
1880.42	3.56E-21	5.49E-22
1879.94	3.56E-21	5.27E-22
1879.46	3.51E-21	5.00E-22
1878.97	3.41E-21	4.68E-22
1878.49	3.22E-21	5.61E-22
1878.01	3.18E-21	6.79E-22
1877.53	3.28E-21	5.39E-22
1877.05	3.42E-21	3.68E-22
1876.56	3.56E-21	3.65E-22
1876.08	3.71E-21	4.14E-22
1875.60	3.72E-21	5.95E-22
1875.12	3.72E-21	7.22E-22
1874.63	3.88E-21	9.06E-22
1874.15	3.97E-21	9.58E-22
1873.67	4.00E-21	9.60E-22
1873.19	3.92E-21	7.55E-22
1872.71	3.81E-21	4.08E-22
1872.22	3.72E-21	2.10E-22
1871.74	3.68E-21	3.85E-22
1871.26	3.73E-21	5.82E-22
1870.78	3.88E-21	7.01E-22
1870.30	3.99E-21	7.63E-22
1869.81	3.86E-21	8.24E-22
1869.33	3.74E-21	9.98E-22
1868.85	3.97E-21	1.16E-21
1868.37	4.13E-21	1.34E-21
1867.88	4.16E-21	1.34E-21
1867.40	4.12E-21	1.13E-21
1866.92	4.17E-21	1.00E-21
1866.44	4.29E-21	9.56E-22
1865.96	4.26E-21	7.71E-22
1865.47	4.16E-21	5.61E-22
1864.99	4.12E-21	3.95E-22
1864.51	4.10E-21	4.74E-22
1864.03	4.11E-21	6.22E-22
1863.54	4.07E-21	5.98E-22
1863.06	3.96E-21	6.55E-22
1862.58	3.87E-21	7.94E-22
1862.10	3.96E-21	5.89E-22
1861.62	4.11E-21	5.25E-22
1861.13	4.20E-21	5.96E-22
1860.65	4.14E-21	5.83E-22
1860.17	4.07E-21	6.99E-22
1859.69	3.94E-21	7.81E-22
1859.21	3.70E-21	7.39E-22
1858.72	3.55E-21	7.03E-22
1858.24	3.57E-21	7.12E-22
1857.76	3.71E-21	6.68E-22
1857.28	3.87E-21	7.26E-22
1856.79	3.92E-21	6.93E-22
1856.31	3.85E-21	6.05E-22
1855.83	3.66E-21	5.67E-22
1855.35	3.42E-21	7.68E-22
1854.87	3.36E-21	8.48E-22
1854.38	3.43E-21	7.98E-22

1853.90	3.42E-21	8.86E-22
1853.42	3.30E-21	9.19E-22
1852.94	3.19E-21	8.48E-22
1852.46	3.13E-21	6.78E-22
1851.97	3.17E-21	4.95E-22
1851.49	3.38E-21	4.27E-22
1851.01	3.53E-21	5.16E-22
1850.53	3.47E-21	6.58E-22
1850.04	3.36E-21	7.80E-22
1849.56	3.50E-21	7.64E-22
1849.08	3.66E-21	9.24E-22
1848.60	3.80E-21	1.15E-21
1848.12	3.91E-21	1.34E-21
1847.63	4.01E-21	1.26E-21
1847.15	3.88E-21	1.11E-21
1846.67	3.71E-21	1.22E-21
1846.19	3.81E-21	1.07E-21
1845.70	3.98E-21	9.48E-22
1845.22	4.02E-21	1.15E-21
1844.74	3.91E-21	1.64E-21
1844.26	3.73E-21	2.36E-21
1843.78	3.88E-21	2.17E-21
1843.29	4.00E-21	1.42E-21
1842.81	4.04E-21	9.69E-22
1842.33	4.06E-21	8.97E-22
1841.85	4.18E-21	9.35E-22
1841.37	4.38E-21	8.51E-22
1840.88	4.48E-21	8.14E-22
1840.40	4.21E-21	5.26E-22
1839.92	3.89E-21	4.34E-22
1839.44	3.83E-21	4.98E-22
1838.95	3.82E-21	5.41E-22
1838.47	3.69E-21	6.13E-22
1837.99	3.69E-21	7.29E-22
1837.51	3.84E-21	8.75E-22
1837.03	3.98E-21	8.23E-22
1836.54	3.97E-21	6.40E-22
1836.06	3.87E-21	5.48E-22
1835.58	3.73E-21	5.38E-22
1835.10	3.85E-21	5.17E-22
1834.62	4.02E-21	7.52E-22
1834.13	3.95E-21	6.68E-22
1833.65	3.72E-21	5.67E-22
1833.17	3.64E-21	8.58E-22
1832.69	3.68E-21	8.49E-22
1832.20	3.59E-21	7.58E-22
1831.72	3.46E-21	8.76E-22
1831.24	3.30E-21	1.38E-21
1830.76	3.23E-21	1.96E-21
1830.28	3.35E-21	2.21E-21
1829.79	3.40E-21	2.24E-21
1829.31	3.42E-21	2.06E-21
1828.83	3.45E-21	1.63E-21
1828.35	3.49E-21	1.08E-21
1827.87	3.42E-21	8.04E-22
1827.38	3.31E-21	6.08E-22
1826.90	3.21E-21	5.72E-22
1826.42	3.12E-21	8.40E-22
1825.94	3.04E-21	1.35E-21
1825.45	3.17E-21	1.74E-21
1824.97	3.33E-21	1.42E-21
1824.49	3.23E-21	9.34E-22

1824.01	3.20E-21	6.96E-22
1823.53	3.28E-21	6.68E-22
1823.04	3.35E-21	6.51E-22
1822.56	3.31E-21	6.06E-22
1822.08	3.20E-21	5.88E-22
1821.60	3.20E-21	6.36E-22
1821.11	3.16E-21	6.51E-22
1820.63	3.06E-21	6.95E-22
1820.15	3.07E-21	7.04E-22
1819.67	3.10E-21	5.86E-22
1819.19	3.20E-21	6.19E-22
1818.70	3.28E-21	6.92E-22
1818.22	3.15E-21	6.09E-22
1817.74	3.15E-21	7.59E-22
1817.26	3.30E-21	7.74E-22
1816.78	3.30E-21	8.41E-22
1816.29	3.18E-21	8.23E-22
1815.81	2.97E-21	8.02E-22
1815.33	2.74E-21	1.16E-21
1814.85	2.59E-21	1.19E-21
1814.36	2.57E-21	8.70E-22
1813.88	2.72E-21	5.44E-22
1813.40	2.93E-21	4.89E-22
1812.92	3.06E-21	5.33E-22
1812.44	3.08E-21	6.55E-22
1811.95	3.18E-21	6.98E-22
1811.47	3.25E-21	8.06E-22
1810.99	3.26E-21	8.36E-22
1810.51	3.32E-21	8.81E-22
1810.03	3.25E-21	7.40E-22
1809.54	3.13E-21	6.18E-22
1809.06	3.02E-21	5.80E-22
1808.58	2.88E-21	6.39E-22
1808.10	2.88E-21	9.46E-22
1807.61	3.06E-21	1.04E-21
1807.13	3.24E-21	8.55E-22
1806.65	3.32E-21	7.52E-22
1806.17	3.35E-21	7.51E-22
1805.69	3.36E-21	7.48E-22
1805.20	3.33E-21	6.84E-22
1804.72	3.27E-21	6.87E-22
1804.24	3.22E-21	7.66E-22
1803.76	3.05E-21	8.29E-22
1803.27	3.05E-21	9.87E-22
1802.79	3.27E-21	1.08E-21
1802.31	3.34E-21	1.07E-21
1801.83	3.26E-21	1.02E-21
1801.35	3.06E-21	1.23E-21
1800.86	2.98E-21	1.43E-21
1800.38	2.89E-21	1.74E-21
1799.90	2.79E-21	2.23E-21
1799.42	2.85E-21	2.18E-21
1798.94	2.96E-21	1.44E-21
1798.45	3.06E-21	9.32E-22
1797.97	3.01E-21	8.72E-22
1797.49	2.88E-21	1.06E-21
1797.01	2.84E-21	1.44E-21
1796.52	3.08E-21	1.63E-21
1796.04	3.32E-21	1.60E-21
1795.56	3.34E-21	1.26E-21
1795.08	3.21E-21	9.76E-22
1794.60	3.13E-21	1.01E-21

1794.11	3.06E-21	1.11E-21
1793.63	2.96E-21	1.38E-21
1793.15	2.70E-21	1.97E-21
1792.67	2.62E-21	2.38E-21
1792.19	2.93E-21	1.81E-21
1791.70	3.19E-21	1.19E-21
1791.22	3.35E-21	1.07E-21
1790.74	3.47E-21	1.03E-21
1790.26	3.44E-21	9.64E-22
1789.77	3.28E-21	8.98E-22
1789.29	3.22E-21	7.70E-22
1788.81	3.32E-21	6.01E-22
1788.33	3.47E-21	5.00E-22
1787.85	3.56E-21	6.27E-22
1787.36	3.62E-21	8.36E-22
1786.88	3.61E-21	8.27E-22
1786.40	3.58E-21	6.89E-22
1785.92	3.62E-21	6.41E-22
1785.44	3.88E-21	7.52E-22
1784.95	4.27E-21	8.52E-22
1784.47	4.46E-21	8.70E-22
1783.99	4.34E-21	8.78E-22
1783.51	4.22E-21	8.88E-22
1783.02	4.08E-21	9.42E-22
1782.54	4.02E-21	1.05E-21
1782.06	4.22E-21	1.05E-21
1781.58	4.55E-21	1.06E-21
1781.10	4.89E-21	1.28E-21
1780.61	5.08E-21	1.39E-21
1780.13	5.10E-21	1.27E-21
1779.65	5.03E-21	1.08E-21
1779.17	4.96E-21	9.34E-22
1778.68	4.76E-21	7.39E-22
1778.20	4.55E-21	5.44E-22
1777.72	4.59E-21	6.68E-22
1777.24	4.58E-21	7.33E-22
1776.76	4.52E-21	7.41E-22
1776.27	4.56E-21	9.28E-22
1775.79	4.66E-21	1.25E-21
1775.31	4.41E-21	1.22E-21
1774.83	4.06E-21	1.07E-21
1774.35	4.02E-21	1.06E-21
1773.86	4.02E-21	1.26E-21
1773.38	3.95E-21	1.91E-21
1772.90	4.12E-21	2.50E-21
1772.42	4.56E-21	2.59E-21
1771.93	4.46E-21	2.28E-21
1771.45	4.24E-21	1.96E-21
1770.97	4.14E-21	1.43E-21
1770.49	3.99E-21	1.01E-21
1770.01	3.82E-21	8.27E-22
1769.52	3.65E-21	8.48E-22
1769.04	3.54E-21	1.05E-21
1768.56	3.49E-21	1.27E-21
1768.08	3.64E-21	1.15E-21
1767.60	3.67E-21	8.92E-22
1767.11	3.65E-21	7.56E-22
1766.63	3.68E-21	7.31E-22
1766.15	3.77E-21	7.42E-22
1765.67	3.83E-21	7.79E-22
1765.18	3.83E-21	7.65E-22
1764.70	3.68E-21	6.52E-22

1764.22	3.50E-21	6.01E-22
1763.74	3.35E-21	6.96E-22
1763.26	3.24E-21	1.03E-21
1762.77	3.14E-21	1.27E-21
1762.29	3.19E-21	1.33E-21
1761.81	3.50E-21	1.44E-21
1761.33	3.60E-21	1.26E-21
1760.84	3.48E-21	9.81E-22
1760.36	3.46E-21	8.44E-22
1759.88	3.59E-21	7.61E-22
1759.40	3.83E-21	8.46E-22
1758.92	3.97E-21	9.16E-22
1758.43	3.99E-21	9.56E-22
1757.95	3.72E-21	9.40E-22
1757.47	3.49E-21	1.36E-21
1756.99	3.51E-21	1.76E-21
1756.51	3.80E-21	1.45E-21
1756.02	3.78E-21	1.08E-21
1755.54	3.68E-21	8.21E-22
1755.06	3.69E-21	7.14E-22
1754.58	3.76E-21	6.85E-22
1754.09	3.70E-21	6.52E-22
1753.61	3.67E-21	7.65E-22
1753.13	3.77E-21	9.49E-22
1752.65	3.98E-21	9.91E-22
1752.17	4.18E-21	1.19E-21
1751.68	4.38E-21	1.64E-21
1751.20	4.61E-21	1.97E-21
1750.72	4.62E-21	1.46E-21
1750.24	4.47E-21	1.02E-21
1749.76	4.40E-21	1.06E-21
1749.27	4.28E-21	1.40E-21
1748.79	4.19E-21	1.82E-21
1748.31	4.23E-21	1.98E-21
1747.83	4.48E-21	1.85E-21
1747.34	4.85E-21	1.92E-21
1746.86	5.10E-21	1.81E-21
1746.38	5.06E-21	1.56E-21
1745.90	4.93E-21	1.48E-21
1745.42	5.10E-21	1.24E-21
1744.93	5.15E-21	9.61E-22
1744.45	5.02E-21	9.59E-22
1743.97	4.88E-21	1.59E-21
1743.49	4.95E-21	2.10E-21
1743.01	5.20E-21	1.87E-21
1742.52	5.33E-21	1.44E-21
1742.04	5.30E-21	1.26E-21
1741.56	5.13E-21	1.14E-21
1741.08	4.92E-21	1.16E-21
1740.59	4.75E-21	1.42E-21
1740.11	4.87E-21	2.21E-21
1739.63	5.23E-21	2.67E-21
1739.15	5.21E-21	2.14E-21
1738.67	5.11E-21	1.60E-21
1738.18	5.18E-21	1.34E-21
1737.70	5.27E-21	1.29E-21
1737.22	5.23E-21	1.19E-21
1736.74	5.14E-21	1.01E-21
1736.25	5.17E-21	8.73E-22
1735.77	5.25E-21	1.04E-21
1735.29	5.10E-21	1.36E-21
1734.81	4.84E-21	2.19E-21

1734.33	4.52E-21	4.32E-21
1733.84	4.25E-21	5.30E-21
1733.36	4.48E-21	3.84E-21
1732.88	4.93E-21	2.26E-21
1732.40	5.16E-21	1.55E-21
1731.92	5.11E-21	1.23E-21
1731.43	5.07E-21	1.03E-21
1730.95	5.09E-21	1.01E-21
1730.47	5.30E-21	1.25E-21
1729.99	5.67E-21	1.62E-21
1729.50	5.49E-21	1.43E-21
1729.02	5.16E-21	1.16E-21
1728.54	5.10E-21	1.05E-21
1728.06	5.15E-21	9.71E-22
1727.58	5.02E-21	9.13E-22
1727.09	5.02E-21	1.02E-21
1726.61	5.08E-21	1.08E-21
1726.13	5.20E-21	9.69E-22
1725.65	5.23E-21	8.87E-22
1725.17	5.30E-21	9.48E-22
1724.68	5.38E-21	1.06E-21
1724.20	5.41E-21	1.06E-21
1723.72	5.48E-21	9.65E-22
1723.24	5.49E-21	8.32E-22
1722.75	5.47E-21	7.53E-22
1722.27	5.60E-21	8.52E-22
1721.79	5.82E-21	9.69E-22
1721.31	5.99E-21	1.04E-21
1720.83	5.96E-21	1.14E-21
1720.34	5.84E-21	1.17E-21
1719.86	5.70E-21	1.23E-21
1719.38	5.57E-21	1.63E-21
1718.90	5.53E-21	2.36E-21
1718.41	5.76E-21	2.88E-21
1717.93	5.98E-21	3.08E-21
1717.45	5.87E-21	2.94E-21
1716.97	5.78E-21	2.19E-21
1716.49	6.03E-21	1.54E-21
1716.00	6.28E-21	1.53E-21
1715.52	6.30E-21	1.63E-21
1715.04	5.91E-21	1.68E-21
1714.56	5.56E-21	2.11E-21
1714.08	5.54E-21	2.06E-21
1713.59	5.76E-21	1.41E-21
1713.11	5.91E-21	1.03E-21
1712.63	5.94E-21	1.02E-21
1712.15	5.97E-21	1.07E-21
1711.66	5.98E-21	1.03E-21
1711.18	5.86E-21	1.12E-21
1710.70	5.80E-21	1.39E-21
1710.22	5.82E-21	1.53E-21
1709.74	5.80E-21	1.24E-21
1709.25	5.77E-21	1.01E-21
1708.77	5.86E-21	1.02E-21
1708.29	5.94E-21	1.20E-21
1707.81	5.96E-21	1.50E-21
1707.33	5.98E-21	1.84E-21
1706.84	5.83E-21	2.45E-21
1706.36	5.80E-21	2.95E-21
1705.88	5.97E-21	2.40E-21
1705.40	6.13E-21	1.89E-21
1704.91	6.57E-21	1.84E-21

1704.43	7.20E-21	1.97E-21
1703.95	7.30E-21	1.56E-21
1703.47	7.19E-21	1.32E-21
1702.99	7.26E-21	1.27E-21
1702.50	7.33E-21	1.25E-21
1702.02	7.19E-21	1.45E-21
1701.54	7.13E-21	2.07E-21
1701.06	6.86E-21	3.31E-21
1700.58	5.22E-21	6.71E-21
1700.09	5.18E-21	8.63E-21
1699.61	7.55E-21	4.70E-21
1699.13	8.37E-21	2.72E-21
1698.65	8.66E-21	1.98E-21
1698.16	8.76E-21	2.03E-21
1697.68	8.69E-21	2.38E-21
1697.20	8.73E-21	2.48E-21
1696.72	8.87E-21	2.48E-21
1696.24	8.49E-21	3.25E-21
1695.75	7.13E-21	5.19E-21
1695.27	7.48E-21	3.76E-21
1694.79	8.37E-21	1.95E-21
1694.31	8.79E-21	1.31E-21
1693.82	8.74E-21	1.26E-21
1693.34	8.64E-21	1.18E-21
1692.86	8.64E-21	1.02E-21
1692.38	8.63E-21	9.78E-22
1691.90	8.46E-21	9.69E-22
1691.41	8.25E-21	9.30E-22
1690.93	8.05E-21	9.68E-22
1690.45	7.89E-21	1.10E-21
1689.97	7.59E-21	1.37E-21
1689.49	7.30E-21	1.40E-21
1689.00	7.24E-21	1.57E-21
1688.52	7.28E-21	1.84E-21
1688.04	7.04E-21	1.85E-21
1687.56	6.70E-21	1.53E-21
1687.07	6.50E-21	1.27E-21
1686.59	6.36E-21	1.31E-21
1686.11	6.31E-21	1.58E-21
1685.63	6.35E-21	2.10E-21
1685.15	6.34E-21	3.00E-21
1684.66	6.07E-21	3.96E-21
1684.18	5.76E-21	4.13E-21
1683.70	5.67E-21	4.42E-21
1683.22	5.44E-21	3.63E-21
1682.74	5.23E-21	2.44E-21
1682.25	5.14E-21	1.67E-21
1681.77	5.04E-21	1.34E-21
1681.29	4.90E-21	1.37E-21
1680.81	4.93E-21	1.67E-21
1680.32	5.01E-21	2.04E-21
1679.84	4.96E-21	2.06E-21
1679.36	4.83E-21	1.67E-21
1678.88	4.76E-21	1.27E-21
1678.40	4.73E-21	1.16E-21
1677.91	4.72E-21	1.15E-21
1677.43	4.84E-21	1.27E-21
1676.95	5.11E-21	1.47E-21
1676.47	5.40E-21	1.84E-21
1675.98	5.42E-21	2.23E-21
1675.50	5.43E-21	2.72E-21
1675.02	5.68E-21	2.63E-21

1674.54	5.71E-21	1.92E-21
1674.06	5.53E-21	1.37E-21
1673.57	5.31E-21	1.09E-21
1673.09	5.14E-21	1.21E-21
1672.61	5.29E-21	1.13E-21
1672.13	5.65E-21	1.25E-21
1671.65	6.19E-21	1.73E-21
1671.16	6.45E-21	1.73E-21
1670.68	6.35E-21	1.61E-21
1670.20	6.28E-21	1.83E-21
1669.72	6.36E-21	2.49E-21
1669.23	7.13E-21	3.11E-21
1668.75	8.13E-21	2.41E-21
1668.27	8.51E-21	1.66E-21
1667.79	8.71E-21	1.11E-21
1667.31	9.01E-21	8.36E-22
1666.82	9.52E-21	8.53E-22
1666.34	1.01E-20	9.16E-22
1665.86	1.08E-20	9.15E-22
1665.38	1.14E-20	7.57E-22
1664.90	1.18E-20	5.34E-22
1664.41	1.24E-20	6.71E-22
1663.93	1.31E-20	1.04E-21
1663.45	1.36E-20	1.63E-21
1662.97	1.42E-20	2.59E-21
1662.48	1.56E-20	2.64E-21
1662.00	1.68E-20	1.61E-21
1661.52	1.76E-20	1.10E-21
1661.04	1.80E-20	8.41E-22
1660.56	1.85E-20	6.63E-22
1660.07	1.89E-20	6.80E-22
1659.59	1.94E-20	8.56E-22
1659.11	1.99E-20	1.05E-21
1658.63	2.03E-20	1.03E-21
1658.15	2.06E-20	1.04E-21
1657.66	2.09E-20	1.06E-21
1657.18	2.11E-20	1.11E-21
1656.70	2.14E-20	1.18E-21
1656.22	2.14E-20	1.33E-21
1655.73	2.14E-20	1.44E-21
1655.25	2.13E-20	1.80E-21
1654.77	2.12E-20	2.71E-21
1654.29	2.07E-20	4.35E-21
1653.81	2.00E-20	5.30E-21
1653.32	1.92E-20	5.56E-21
1652.84	1.67E-20	5.51E-21
1652.36	1.65E-20	3.12E-21
1651.88	1.72E-20	1.86E-21
1651.39	1.71E-20	1.51E-21
1650.91	1.67E-20	1.32E-21
1650.43	1.61E-20	1.22E-21
1649.95	1.54E-20	1.24E-21
1649.47	1.45E-20	1.42E-21
1648.98	1.36E-20	1.89E-21
1648.50	1.28E-20	2.71E-21
1648.02	1.22E-20	3.19E-21
1647.54	1.19E-20	2.97E-21
1647.06	1.15E-20	2.81E-21
1646.57	1.10E-20	2.72E-21
1646.09	9.94E-21	2.57E-21
1645.61	8.75E-21	1.91E-21
1645.13	8.27E-21	1.34E-21

1644.64	7.93E-21	1.02E-21
1644.16	7.61E-21	8.57E-22
1643.68	7.33E-21	7.67E-22
1643.20	7.08E-21	8.93E-22
1642.72	6.82E-21	1.07E-21
1642.23	6.62E-21	1.18E-21
1641.75	6.41E-21	1.09E-21
1641.27	6.20E-21	1.05E-21
1640.79	5.98E-21	1.15E-21
1640.31	5.80E-21	1.11E-21
1639.82	5.62E-21	1.08E-21
1639.34	5.40E-21	1.12E-21
1638.86	5.26E-21	1.26E-21
1638.38	5.33E-21	1.70E-21
1637.89	5.35E-21	2.20E-21
1637.41	5.25E-21	2.49E-21
1636.93	5.15E-21	2.34E-21
1636.45	4.99E-21	2.49E-21
1635.97	4.87E-21	3.22E-21
1635.48	4.76E-21	4.62E-21
1635.00	4.78E-21	3.48E-21
1634.52	4.95E-21	1.87E-21
1634.04	5.06E-21	1.34E-21
1633.55	4.99E-21	1.09E-21
1633.07	4.91E-21	8.84E-22
1632.59	4.78E-21	7.19E-22
1632.11	4.56E-21	8.89E-22
1631.63	4.36E-21	1.06E-21
1631.14	4.30E-21	1.10E-21
1630.66	4.39E-21	1.10E-21
1630.18	4.53E-21	1.14E-21
1629.70	4.62E-21	1.25E-21
1629.22	4.49E-21	1.31E-21
1628.73	4.28E-21	1.49E-21
1628.25	4.12E-21	1.87E-21
1627.77	4.12E-21	1.92E-21
1627.29	4.27E-21	1.34E-21
1626.80	4.37E-21	9.28E-22
1626.32	4.47E-21	8.53E-22
1625.84	4.60E-21	9.51E-22
1625.36	4.70E-21	1.08E-21
1624.88	4.80E-21	1.33E-21
1624.39	4.60E-21	1.55E-21
1623.91	4.16E-21	2.58E-21
1623.43	3.93E-21	3.80E-21
1622.95	4.21E-21	3.14E-21
1622.47	4.41E-21	2.08E-21
1621.98	4.35E-21	1.37E-21
1621.50	4.30E-21	1.05E-21
1621.02	4.26E-21	1.08E-21
1620.54	4.20E-21	1.14E-21
1620.05	4.06E-21	1.07E-21
1619.57	3.93E-21	1.06E-21
1619.09	3.83E-21	1.09E-21
1618.61	3.89E-21	1.18E-21
1618.13	3.93E-21	1.41E-21
1617.64	3.83E-21	1.95E-21
1617.16	3.42E-21	2.71E-21
1616.68	3.44E-21	2.87E-21
1616.20	4.21E-21	2.19E-21
1615.72	4.50E-21	1.84E-21
1615.23	4.39E-21	1.55E-21

1614.75	4.12E-21	1.18E-21
1614.27	4.01E-21	1.01E-21
1613.79	4.11E-21	1.04E-21
1613.30	4.10E-21	1.07E-21
1612.82	3.96E-21	9.84E-22
1612.34	3.92E-21	9.93E-22
1611.86	3.92E-21	1.10E-21
1611.38	3.98E-21	1.07E-21
1610.89	4.03E-21	9.56E-22
1610.41	4.19E-21	9.98E-22
1609.93	4.43E-21	1.19E-21
1609.45	4.56E-21	1.27E-21
1608.96	4.56E-21	1.22E-21
1608.48	4.45E-21	1.15E-21
1608.00	4.48E-21	1.23E-21
1607.52	4.73E-21	1.35E-21
1607.04	4.93E-21	1.36E-21
1606.55	4.89E-21	1.14E-21
1606.07	4.79E-21	9.55E-22
1605.59	4.73E-21	8.49E-22
1605.11	4.78E-21	1.07E-21
1604.63	4.82E-21	1.25E-21
1604.14	4.86E-21	1.22E-21
1603.66	4.92E-21	1.12E-21
1603.18	5.01E-21	1.12E-21
1602.70	5.05E-21	1.09E-21
1602.21	5.08E-21	8.76E-22
1601.73	5.13E-21	7.90E-22
1601.25	5.18E-21	8.10E-22
1600.77	5.06E-21	9.08E-22
1600.29	5.04E-21	9.53E-22
1599.80	5.23E-21	8.53E-22
1599.32	5.51E-21	9.71E-22
1598.84	5.81E-21	1.09E-21
1598.36	5.95E-21	1.05E-21
1597.88	5.96E-21	9.67E-22
1597.39	5.95E-21	9.42E-22
1596.91	5.91E-21	9.66E-22
1596.43	6.07E-21	9.18E-22
1595.95	6.26E-21	9.43E-22
1595.46	6.37E-21	1.07E-21
1594.98	6.49E-21	1.13E-21
1594.50	6.56E-21	9.98E-22
1594.02	6.51E-21	7.72E-22
1593.54	6.56E-21	6.67E-22
1593.05	6.72E-21	7.73E-22
1592.57	6.90E-21	7.43E-22
1592.09	7.06E-21	7.51E-22
1591.61	6.97E-21	7.91E-22
1591.12	6.75E-21	9.14E-22
1590.64	6.70E-21	7.97E-22
1590.16	6.86E-21	7.28E-22
1589.68	7.02E-21	8.07E-22
1589.20	7.11E-21	1.08E-21
1588.71	7.28E-21	1.15E-21
1588.23	7.23E-21	1.16E-21
1587.75	7.14E-21	1.04E-21
1587.27	7.10E-21	1.01E-21
1586.79	7.16E-21	9.46E-22
1586.30	7.19E-21	8.30E-22
1585.82	7.13E-21	6.94E-22
1585.34	6.89E-21	9.30E-22

1584.86	6.76E-21	1.26E-21
1584.37	6.95E-21	1.24E-21
1583.89	7.15E-21	1.11E-21
1583.41	7.28E-21	1.02E-21
1582.93	7.39E-21	8.74E-22
1582.45	7.37E-21	8.17E-22
1581.96	7.22E-21	8.77E-22
1581.48	7.14E-21	9.69E-22
1581.00	7.18E-21	9.91E-22
1580.52	7.30E-21	9.89E-22
1580.04	7.35E-21	9.89E-22
1579.55	7.40E-21	1.14E-21
1579.07	7.35E-21	1.20E-21
1578.59	7.30E-21	1.23E-21
1578.11	7.45E-21	1.36E-21
1577.62	7.65E-21	1.73E-21
1577.14	7.70E-21	2.07E-21
1576.66	7.58E-21	2.32E-21
1576.18	8.01E-21	2.81E-21
1575.70	8.20E-21	2.62E-21
1575.21	7.70E-21	1.77E-21
1574.73	7.37E-21	1.37E-21
1574.25	7.31E-21	1.26E-21
1573.77	7.33E-21	1.14E-21
1573.29	7.14E-21	1.13E-21
1572.80	7.06E-21	1.12E-21
1572.32	7.19E-21	1.15E-21
1571.84	7.32E-21	1.02E-21
1571.36	7.26E-21	8.18E-22
1570.87	6.93E-21	1.12E-21
1570.39	6.67E-21	1.84E-21
1569.91	6.79E-21	2.40E-21
1569.43	7.37E-21	2.35E-21
1568.95	7.43E-21	1.84E-21
1568.46	7.17E-21	1.43E-21
1567.98	7.17E-21	1.19E-21
1567.50	7.33E-21	1.03E-21
1567.02	7.30E-21	8.89E-22
1566.53	7.25E-21	8.12E-22
1566.05	7.21E-21	9.95E-22
1565.57	7.13E-21	1.51E-21
1565.09	7.02E-21	2.10E-21
1564.61	7.07E-21	1.95E-21
1564.12	7.03E-21	1.46E-21
1563.64	7.01E-21	1.27E-21
1563.16	7.01E-21	1.34E-21
1562.68	6.97E-21	1.35E-21
1562.20	6.75E-21	1.43E-21
1561.71	6.58E-21	1.57E-21
1561.23	6.59E-21	1.73E-21
1560.75	6.60E-21	1.82E-21
1560.27	6.66E-21	2.71E-21
1559.78	7.37E-21	4.16E-21
1559.30	6.86E-21	3.88E-21
1558.82	5.02E-21	4.85E-21
1558.34	3.14E-21	7.60E-21
1557.86	4.35E-21	6.84E-21
1557.37	6.04E-21	3.45E-21
1556.89	6.41E-21	2.15E-21
1556.41	6.27E-21	1.82E-21
1555.93	6.10E-21	1.80E-21
1555.45	5.97E-21	1.90E-21

1554.96	5.80E-21	2.12E-21
1554.48	5.70E-21	2.58E-21
1554.00	5.90E-21	2.07E-21
1553.52	6.08E-21	1.19E-21
1553.03	5.93E-21	9.62E-22
1552.55	5.58E-21	1.19E-21
1552.07	5.39E-21	1.29E-21
1551.59	5.47E-21	1.08E-21
1551.11	5.74E-21	1.05E-21
1550.62	6.07E-21	1.48E-21
1550.14	6.32E-21	2.17E-21
1549.66	6.20E-21	2.22E-21
1549.18	5.80E-21	1.59E-21
1548.69	5.48E-21	1.20E-21
1548.21	5.23E-21	1.22E-21
1547.73	5.07E-21	1.38E-21
1547.25	5.12E-21	1.37E-21
1546.77	5.32E-21	1.06E-21
1546.28	5.56E-21	1.16E-21
1545.80	5.87E-21	1.77E-21
1545.32	6.33E-21	2.57E-21
1544.84	6.35E-21	2.62E-21
1544.36	5.95E-21	2.39E-21
1543.87	5.57E-21	2.66E-21
1543.39	5.38E-21	3.11E-21
1542.91	5.44E-21	3.07E-21
1542.43	5.76E-21	2.60E-21
1541.94	6.24E-21	2.48E-21
1541.46	6.20E-21	2.89E-21
1540.98	5.99E-21	3.50E-21
1540.50	5.80E-21	4.66E-21
1540.02	5.74E-21	6.14E-21
1539.53	5.48E-21	6.44E-21
1539.05	5.50E-21	5.11E-21
1538.57	5.97E-21	3.19E-21
1538.09	6.09E-21	2.12E-21
1537.61	6.12E-21	1.54E-21
1537.12	6.26E-21	1.25E-21
1536.64	6.36E-21	1.21E-21
1536.16	6.50E-21	1.39E-21
1535.68	6.69E-21	1.64E-21
1535.19	6.85E-21	1.87E-21
1534.71	6.96E-21	2.07E-21
1534.23	6.96E-21	2.50E-21
1533.75	6.77E-21	2.92E-21
1533.27	6.78E-21	2.65E-21
1532.78	7.11E-21	1.91E-21
1532.30	7.41E-21	1.60E-21
1531.82	7.51E-21	1.65E-21
1531.34	7.33E-21	1.48E-21
1530.86	6.96E-21	1.03E-21
1530.37	6.91E-21	7.52E-22
1529.89	6.96E-21	8.68E-22
1529.41	6.95E-21	1.23E-21
1528.93	6.74E-21	1.80E-21
1528.44	6.68E-21	2.20E-21
1527.96	6.78E-21	2.41E-21
1527.48	7.05E-21	2.54E-21
1527.00	7.27E-21	2.30E-21
1526.52	7.23E-21	1.96E-21
1526.03	6.96E-21	1.95E-21
1525.55	7.06E-21	1.95E-21

1525.07	7.52E-21	1.88E-21
1524.59	7.47E-21	1.63E-21
1524.10	7.19E-21	1.68E-21
1523.62	6.99E-21	2.07E-21
1523.14	6.60E-21	2.83E-21
1522.66	6.24E-21	3.58E-21
1522.18	6.47E-21	3.48E-21
1521.69	6.74E-21	3.69E-21
1521.21	6.71E-21	4.37E-21
1520.73	6.80E-21	3.98E-21
1520.25	6.91E-21	3.21E-21
1519.77	7.11E-21	2.46E-21
1519.28	7.26E-21	1.71E-21
1518.80	7.18E-21	1.49E-21
1518.32	6.99E-21	1.91E-21
1517.84	6.96E-21	3.08E-21
1517.35	7.43E-21	4.42E-21
1516.87	8.04E-21	3.91E-21
1516.39	8.33E-21	2.36E-21
1515.91	8.25E-21	1.66E-21
1515.43	8.01E-21	1.40E-21
1514.94	7.72E-21	1.29E-21
1514.46	7.51E-21	1.32E-21
1513.98	7.34E-21	1.34E-21
1513.50	7.29E-21	1.40E-21
1513.02	7.24E-21	1.64E-21
1512.53	7.23E-21	2.17E-21
1512.05	7.49E-21	2.05E-21
1511.57	7.74E-21	1.41E-21
1511.09	7.99E-21	1.19E-21
1510.60	8.20E-21	1.35E-21
1510.12	8.29E-21	1.68E-21
1509.64	8.31E-21	2.10E-21
1509.16	8.61E-21	2.32E-21
1508.68	9.02E-21	2.63E-21
1508.19	9.03E-21	3.00E-21
1507.71	8.54E-21	4.16E-21
1507.23	7.89E-21	6.76E-21
1506.75	7.67E-21	7.53E-21
1506.26	7.96E-21	5.21E-21
1505.78	8.58E-21	3.73E-21
1505.30	8.82E-21	2.86E-21
1504.82	8.47E-21	2.10E-21
1504.34	8.21E-21	1.59E-21
1503.85	8.35E-21	1.02E-21
1503.37	8.53E-21	9.07E-22
1502.89	8.58E-21	1.14E-21
1502.41	8.64E-21	1.36E-21
1501.93	8.75E-21	1.38E-21
1501.44	8.84E-21	1.23E-21
1500.96	8.83E-21	1.14E-21
1500.48	8.88E-21	1.14E-21
1500.00	9.00E-21	1.29E-21
1499.51	9.21E-21	1.72E-21
1499.03	9.55E-21	2.20E-21
1498.55	9.71E-21	2.16E-21
1498.07	9.65E-21	1.69E-21
1497.59	9.58E-21	1.44E-21
1497.10	9.31E-21	1.49E-21
1496.62	8.88E-21	2.10E-21
1496.14	9.04E-21	1.94E-21
1495.66	9.64E-21	1.25E-21

1495.18	9.88E-21	1.06E-21
1494.69	1.01E-20	1.01E-21
1494.21	1.02E-20	1.04E-21
1493.73	1.04E-20	1.09E-21
1493.25	1.05E-20	1.19E-21
1492.76	1.07E-20	1.21E-21
1492.28	1.09E-20	1.26E-21
1491.80	1.12E-20	1.30E-21
1491.32	1.13E-20	1.34E-21
1490.84	1.11E-20	1.62E-21
1490.35	1.09E-20	2.45E-21
1489.87	1.13E-20	3.05E-21
1489.39	1.16E-20	2.87E-21
1488.91	1.17E-20	1.97E-21
1488.43	1.17E-20	1.27E-21
1487.94	1.16E-20	1.26E-21
1487.46	1.14E-20	1.60E-21
1486.98	1.17E-20	1.47E-21
1486.50	1.19E-20	1.22E-21
1486.01	1.19E-20	1.03E-21
1485.53	1.17E-20	8.99E-22
1485.05	1.14E-20	8.83E-22
1484.57	1.14E-20	8.30E-22
1484.09	1.13E-20	8.69E-22
1483.60	1.13E-20	9.05E-22
1483.12	1.12E-20	9.37E-22
1482.64	1.13E-20	8.07E-22
1482.16	1.13E-20	7.40E-22
1481.67	1.13E-20	9.00E-22
1481.19	1.13E-20	9.77E-22
1480.71	1.12E-20	8.89E-22
1480.23	1.12E-20	7.86E-22
1479.75	1.12E-20	8.45E-22
1479.26	1.09E-20	8.58E-22
1478.78	1.09E-20	8.74E-22
1478.30	1.09E-20	8.96E-22
1477.82	1.10E-20	9.44E-22
1477.34	1.10E-20	1.11E-21
1476.85	1.09E-20	1.48E-21
1476.37	1.09E-20	1.88E-21
1475.89	1.08E-20	1.62E-21
1475.41	1.08E-20	1.28E-21
1474.92	1.09E-20	1.28E-21
1474.44	1.10E-20	1.38E-21
1473.96	1.10E-20	1.74E-21
1473.48	1.09E-20	2.17E-21
1473.00	1.09E-20	2.28E-21
1472.51	1.11E-20	2.53E-21
1472.03	1.16E-20	2.92E-21
1471.55	1.16E-20	2.44E-21
1471.07	1.12E-20	1.69E-21
1470.59	1.08E-20	1.19E-21
1470.10	1.06E-20	9.93E-22
1469.62	1.06E-20	8.17E-22
1469.14	1.08E-20	8.03E-22
1468.66	1.08E-20	8.40E-22
1468.17	1.07E-20	8.79E-22
1467.69	1.06E-20	1.00E-21
1467.21	1.07E-20	1.04E-21
1466.73	1.09E-20	9.61E-22
1466.25	1.10E-20	9.85E-22
1465.76	1.09E-20	1.07E-21

1465.28	1.04E-20	1.75E-21
1464.80	1.03E-20	2.22E-21
1464.32	1.07E-20	1.72E-21
1463.83	1.10E-20	1.24E-21
1463.35	1.12E-20	9.81E-22
1462.87	1.13E-20	9.42E-22
1462.39	1.15E-20	1.12E-21
1461.91	1.15E-20	1.19E-21
1461.42	1.15E-20	1.02E-21
1460.94	1.15E-20	7.68E-22
1460.46	1.15E-20	8.43E-22
1459.98	1.17E-20	1.15E-21
1459.50	1.17E-20	1.55E-21
1459.01	1.14E-20	2.27E-21
1458.53	1.11E-20	3.05E-21
1458.05	1.11E-20	3.11E-21
1457.57	1.10E-20	2.74E-21
1457.08	1.04E-20	2.18E-21
1456.60	1.08E-20	1.55E-21
1456.12	1.19E-20	1.46E-21
1455.64	1.24E-20	1.45E-21
1455.16	1.27E-20	1.48E-21
1454.67	1.28E-20	1.37E-21
1454.19	1.29E-20	1.37E-21
1453.71	1.29E-20	1.37E-21
1453.23	1.30E-20	1.33E-21
1452.75	1.30E-20	1.18E-21
1452.26	1.30E-20	1.17E-21
1451.78	1.32E-20	1.09E-21
1451.30	1.33E-20	1.08E-21
1450.82	1.33E-20	1.06E-21
1450.33	1.32E-20	9.28E-22
1449.85	1.32E-20	8.11E-22
1449.37	1.34E-20	8.69E-22
1448.89	1.35E-20	1.15E-21
1448.41	1.39E-20	1.40E-21
1447.92	1.46E-20	1.62E-21
1447.44	1.51E-20	1.59E-21
1446.96	1.53E-20	1.38E-21
1446.48	1.55E-20	1.14E-21
1446.00	1.56E-20	9.38E-22
1445.51	1.59E-20	7.88E-22
1445.03	1.64E-20	7.69E-22
1444.55	1.69E-20	8.64E-22
1444.07	1.74E-20	7.79E-22
1443.58	1.80E-20	6.80E-22
1443.10	1.87E-20	6.29E-22
1442.62	1.94E-20	6.44E-22
1442.14	2.03E-20	7.51E-22
1441.66	2.15E-20	6.49E-22
1441.17	2.27E-20	5.76E-22
1440.69	2.41E-20	5.51E-22
1440.21	2.58E-20	6.19E-22
1439.73	2.79E-20	6.83E-22
1439.24	3.03E-20	6.93E-22
1438.76	3.30E-20	7.58E-22
1438.28	3.63E-20	9.72E-22
1437.80	3.96E-20	1.36E-21
1437.32	4.29E-20	1.70E-21
1436.83	5.02E-20	2.11E-21
1436.35	6.20E-20	2.31E-21
1435.87	6.93E-20	1.47E-21

1435.39	7.72E-20	1.36E-21
1434.91	8.71E-20	1.28E-21
1434.42	9.88E-20	1.08E-21
1433.94	1.12E-19	8.05E-22
1433.46	1.27E-19	8.66E-22
1432.98	1.45E-19	1.03E-21
1432.49	1.63E-19	1.49E-21
1432.01	1.80E-19	2.00E-21
1431.53	1.97E-19	2.51E-21
1431.05	2.12E-19	2.92E-21
1430.57	2.24E-19	3.22E-21
1430.08	2.36E-19	3.34E-21
1429.60	2.48E-19	3.43E-21
1429.12	2.54E-19	3.67E-21
1428.64	2.58E-19	3.76E-21
1428.16	2.63E-19	3.85E-21
1427.67	2.70E-19	4.13E-21
1427.19	2.81E-19	4.56E-21
1426.71	2.99E-19	4.92E-21
1426.23	3.19E-19	5.23E-21
1425.74	3.32E-19	5.40E-21
1425.26	3.33E-19	5.31E-21
1424.78	3.23E-19	4.63E-21
1424.30	3.09E-19	3.82E-21
1423.82	2.94E-19	3.77E-21
1423.33	2.85E-19	4.10E-21
1422.85	2.81E-19	4.28E-21
1422.37	2.77E-19	4.37E-21
1421.89	2.73E-19	4.31E-21
1421.40	2.68E-19	4.15E-21
1420.92	2.61E-19	3.68E-21
1420.44	2.54E-19	2.90E-21
1419.96	2.47E-19	1.83E-21
1419.48	2.31E-19	1.62E-21
1418.99	2.02E-19	2.27E-21
1418.51	1.88E-19	2.02E-21
1418.03	1.78E-19	1.41E-21
1417.55	1.63E-19	1.02E-21
1417.07	1.45E-19	9.04E-22
1416.58	1.31E-19	6.71E-22
1416.10	1.18E-19	4.72E-22
1415.62	1.05E-19	5.54E-22
1415.14	9.45E-20	8.35E-22
1414.65	8.48E-20	7.95E-22
1414.17	7.60E-20	5.33E-22
1413.69	6.84E-20	2.79E-22
1413.21	6.21E-20	4.59E-22
1412.73	5.67E-20	6.20E-22
1412.24	5.20E-20	7.15E-22
1411.76	4.74E-20	5.75E-22
1411.28	4.34E-20	5.77E-22
1410.80	4.02E-20	6.98E-22
1410.32	3.75E-20	8.52E-22
1409.83	3.50E-20	9.47E-22
1409.35	3.26E-20	8.67E-22
1408.87	3.07E-20	8.09E-22
1408.39	2.89E-20	7.86E-22
1407.90	2.73E-20	7.72E-22
1407.42	2.59E-20	8.35E-22
1406.94	2.47E-20	8.88E-22
1406.46	2.37E-20	8.43E-22
1405.98	2.27E-20	9.27E-22

1405.49	2.19E-20	1.06E-21
1405.01	2.14E-20	1.02E-21
1404.53	2.08E-20	1.21E-21
1404.05	2.01E-20	1.21E-21
1403.57	1.95E-20	1.07E-21
1403.08	1.88E-20	7.88E-22
1402.60	1.83E-20	7.03E-22
1402.12	1.79E-20	7.33E-22
1401.64	1.75E-20	8.90E-22
1401.15	1.70E-20	1.02E-21
1400.67	1.66E-20	9.42E-22
1400.19	1.64E-20	1.09E-21
1399.71	1.64E-20	1.48E-21
1399.23	1.66E-20	1.74E-21
1398.74	1.65E-20	1.61E-21
1398.26	1.63E-20	1.39E-21
1397.78	1.63E-20	1.15E-21
1397.30	1.63E-20	9.74E-22
1396.81	1.62E-20	1.08E-21
1396.33	1.61E-20	1.48E-21
1395.85	1.62E-20	1.66E-21
1395.37	1.64E-20	1.54E-21
1394.89	1.67E-20	1.41E-21
1394.40	1.73E-20	1.51E-21
1393.92	1.75E-20	1.27E-21
1393.44	1.74E-20	9.38E-22
1392.96	1.72E-20	7.97E-22
1392.48	1.71E-20	7.70E-22
1391.99	1.72E-20	8.24E-22
1391.51	1.74E-20	8.83E-22
1391.03	1.77E-20	9.10E-22
1390.55	1.80E-20	9.39E-22
1390.06	1.80E-20	8.64E-22
1389.58	1.82E-20	8.19E-22
1389.10	1.83E-20	7.59E-22
1388.62	1.84E-20	6.99E-22
1388.14	1.84E-20	9.57E-22
1387.65	1.85E-20	1.38E-21
1387.17	1.89E-20	1.51E-21
1386.69	1.94E-20	1.27E-21
1386.21	1.96E-20	9.81E-22
1385.73	1.98E-20	8.13E-22
1385.24	2.00E-20	8.22E-22
1384.76	2.03E-20	9.01E-22
1384.28	2.07E-20	9.81E-22
1383.80	2.09E-20	9.17E-22
1383.31	2.09E-20	7.70E-22
1382.83	2.11E-20	7.95E-22
1382.35	2.13E-20	7.34E-22
1381.87	2.16E-20	7.21E-22
1381.39	2.19E-20	9.08E-22
1380.90	2.24E-20	1.04E-21
1380.42	2.29E-20	9.68E-22
1379.94	2.35E-20	8.73E-22
1379.46	2.40E-20	8.18E-22
1378.97	2.42E-20	7.33E-22
1378.49	2.45E-20	7.29E-22
1378.01	2.50E-20	9.19E-22
1377.53	2.55E-20	1.11E-21
1377.05	2.61E-20	9.86E-22
1376.56	2.68E-20	8.42E-22
1376.08	2.74E-20	8.51E-22

1375.60	2.83E-20	1.05E-21
1375.12	2.94E-20	1.16E-21
1374.64	3.02E-20	1.24E-21
1374.15	3.11E-20	1.79E-21
1373.67	3.27E-20	1.80E-21
1373.19	3.49E-20	1.16E-21
1372.71	3.70E-20	7.25E-22
1372.22	3.96E-20	6.61E-22
1371.74	4.28E-20	4.57E-22
1371.26	4.66E-20	4.93E-22
1370.78	5.18E-20	6.85E-22
1370.30	5.85E-20	7.70E-22
1369.81	6.69E-20	9.17E-22
1369.33	7.67E-20	1.31E-21
1368.85	8.98E-20	1.93E-21
1368.37	1.07E-19	2.27E-21
1367.89	1.25E-19	2.70E-21
1367.40	1.45E-19	3.33E-21
1366.92	1.68E-19	4.02E-21
1366.44	1.93E-19	4.89E-21
1365.96	2.20E-19	5.76E-21
1365.47	2.47E-19	6.44E-21
1364.99	2.75E-19	7.05E-21
1364.51	3.03E-19	7.69E-21
1364.03	3.28E-19	8.46E-21
1363.55	3.55E-19	9.12E-21
1363.06	3.91E-19	8.90E-21
1362.58	4.26E-19	8.91E-21
1362.10	4.52E-19	9.97E-21
1361.62	4.77E-19	1.10E-20
1361.14	5.06E-19	1.14E-20
1360.65	5.36E-19	1.16E-20
1360.17	5.60E-19	1.20E-20
1359.69	5.80E-19	1.24E-20
1359.21	5.99E-19	1.25E-20
1358.72	6.14E-19	1.24E-20
1358.24	6.27E-19	1.22E-20
1357.76	6.37E-19	1.19E-20
1357.28	6.43E-19	1.16E-20
1356.80	6.48E-19	1.14E-20
1356.31	6.50E-19	1.10E-20
1355.83	6.51E-19	1.05E-20
1355.35	6.49E-19	9.88E-21
1354.87	6.43E-19	9.42E-21
1354.38	6.34E-19	9.03E-21
1353.90	6.22E-19	8.40E-21
1353.42	6.07E-19	7.66E-21
1352.94	5.89E-19	6.95E-21
1352.46	5.70E-19	6.39E-21
1351.97	5.49E-19	6.01E-21
1351.49	5.26E-19	5.82E-21
1351.01	5.03E-19	5.56E-21
1350.53	4.79E-19	5.14E-21
1350.05	4.54E-19	4.69E-21
1349.56	4.28E-19	4.31E-21
1349.08	4.02E-19	4.27E-21
1348.60	3.77E-19	4.47E-21
1348.12	3.52E-19	4.51E-21
1347.63	3.27E-19	4.33E-21
1347.15	3.03E-19	4.03E-21
1346.67	2.80E-19	3.83E-21
1346.19	2.58E-19	3.66E-21

1345.71	2.38E-19	3.56E-21
1345.22	2.19E-19	3.52E-21
1344.74	2.01E-19	3.19E-21
1344.26	1.85E-19	2.85E-21
1343.78	1.69E-19	2.56E-21
1343.30	1.56E-19	2.48E-21
1342.81	1.44E-19	2.62E-21
1342.33	1.33E-19	2.81E-21
1341.85	1.24E-19	2.68E-21
1341.37	1.15E-19	2.31E-21
1340.88	1.07E-19	2.19E-21
1340.40	1.00E-19	2.21E-21
1339.92	9.32E-20	1.92E-21
1339.44	8.78E-20	1.63E-21
1338.96	8.32E-20	1.50E-21
1338.47	7.89E-20	1.48E-21
1337.99	7.53E-20	1.53E-21
1337.51	7.24E-20	1.44E-21
1337.03	6.96E-20	1.15E-21
1336.54	6.68E-20	9.82E-22
1336.06	6.43E-20	8.06E-22
1335.58	6.24E-20	6.97E-22
1335.10	6.10E-20	8.07E-22
1334.62	5.97E-20	9.28E-22
1334.13	5.85E-20	7.95E-22
1333.65	5.75E-20	5.70E-22
1333.17	5.65E-20	4.55E-22
1332.69	5.59E-20	5.30E-22
1332.21	5.54E-20	6.14E-22
1331.72	5.50E-20	6.01E-22
1331.24	5.46E-20	6.58E-22
1330.76	5.43E-20	6.60E-22
1330.28	5.41E-20	6.92E-22
1329.79	5.41E-20	8.08E-22
1329.31	5.44E-20	8.24E-22
1328.83	5.49E-20	8.38E-22
1328.35	5.54E-20	6.80E-22
1327.87	5.59E-20	5.39E-22
1327.38	5.65E-20	4.71E-22
1326.90	5.76E-20	2.98E-22
1326.42	5.89E-20	4.08E-22
1325.94	6.06E-20	6.16E-22
1325.46	6.22E-20	6.56E-22
1324.97	6.38E-20	5.11E-22
1324.49	6.54E-20	4.50E-22
1324.01	6.71E-20	3.72E-22
1323.53	6.91E-20	5.17E-22
1323.04	7.11E-20	8.32E-22
1322.56	7.31E-20	9.09E-22
1322.08	7.54E-20	8.62E-22
1321.60	7.76E-20	7.96E-22
1321.12	7.99E-20	5.88E-22
1320.63	8.24E-20	4.89E-22
1320.15	8.48E-20	5.63E-22
1319.67	8.72E-20	6.53E-22
1319.19	8.96E-20	8.41E-22
1318.71	9.24E-20	7.28E-22
1318.22	9.50E-20	4.84E-22
1317.74	9.73E-20	4.15E-22
1317.26	9.98E-20	4.28E-22
1316.78	1.02E-19	5.53E-22
1316.29	1.05E-19	6.17E-22

1315.81	1.07E-19	6.90E-22
1315.33	1.09E-19	9.49E-22
1314.85	1.11E-19	1.10E-21
1314.37	1.13E-19	9.50E-22
1313.88	1.15E-19	6.50E-22
1313.40	1.17E-19	5.50E-22
1312.92	1.19E-19	5.75E-22
1312.44	1.21E-19	6.62E-22
1311.95	1.23E-19	8.01E-22
1311.47	1.25E-19	7.97E-22
1310.99	1.27E-19	8.37E-22
1310.51	1.29E-19	9.85E-22
1310.03	1.31E-19	1.06E-21
1309.54	1.33E-19	9.86E-22
1309.06	1.35E-19	9.44E-22
1308.58	1.37E-19	9.22E-22
1308.10	1.40E-19	9.07E-22
1307.62	1.42E-19	1.02E-21
1307.13	1.44E-19	1.15E-21
1306.65	1.47E-19	1.05E-21
1306.17	1.50E-19	9.14E-22
1305.69	1.53E-19	9.52E-22
1305.20	1.57E-19	1.07E-21
1304.72	1.61E-19	1.22E-21
1304.24	1.66E-19	1.44E-21
1303.76	1.71E-19	1.60E-21
1303.28	1.77E-19	1.69E-21
1302.79	1.84E-19	1.89E-21
1302.31	1.92E-19	2.20E-21
1301.83	2.00E-19	2.51E-21
1301.35	2.09E-19	2.64E-21
1300.87	2.18E-19	2.73E-21
1300.38	2.28E-19	2.95E-21
1299.90	2.38E-19	3.34E-21
1299.42	2.49E-19	3.81E-21
1298.94	2.60E-19	4.23E-21
1298.45	2.72E-19	4.55E-21
1297.97	2.84E-19	4.79E-21
1297.49	2.96E-19	4.99E-21
1297.01	3.08E-19	5.14E-21
1296.53	3.20E-19	5.31E-21
1296.04	3.32E-19	5.59E-21
1295.56	3.44E-19	5.95E-21
1295.08	3.55E-19	6.25E-21
1294.60	3.66E-19	6.41E-21
1294.11	3.76E-19	6.50E-21
1293.63	3.85E-19	6.65E-21
1293.15	3.94E-19	6.81E-21
1292.67	4.01E-19	6.88E-21
1292.19	4.07E-19	6.81E-21
1291.70	4.12E-19	6.75E-21
1291.22	4.16E-19	6.79E-21
1290.74	4.19E-19	6.79E-21
1290.26	4.21E-19	6.67E-21
1289.78	4.23E-19	6.49E-21
1289.29	4.24E-19	6.33E-21
1288.81	4.24E-19	6.19E-21
1288.33	4.24E-19	5.94E-21
1287.85	4.22E-19	5.68E-21
1287.36	4.20E-19	5.55E-21
1286.88	4.17E-19	5.32E-21
1286.40	4.14E-19	5.07E-21

1285.92	4.11E-19	4.94E-21
1285.44	4.09E-19	4.85E-21
1284.95	4.07E-19	4.77E-21
1284.47	4.04E-19	4.62E-21
1283.99	4.00E-19	4.44E-21
1283.51	3.96E-19	4.20E-21
1283.03	3.91E-19	3.98E-21
1282.54	3.86E-19	3.83E-21
1282.06	3.80E-19	3.62E-21
1281.58	3.75E-19	3.37E-21
1281.10	3.70E-19	3.31E-21
1280.61	3.66E-19	3.32E-21
1280.13	3.62E-19	3.23E-21
1279.65	3.59E-19	3.11E-21
1279.17	3.56E-19	2.91E-21
1278.69	3.54E-19	2.71E-21
1278.20	3.52E-19	2.43E-21
1277.72	3.49E-19	2.31E-21
1277.24	3.46E-19	2.37E-21
1276.76	3.44E-19	2.43E-21
1276.28	3.41E-19	2.42E-21
1275.79	3.39E-19	2.36E-21
1275.31	3.37E-19	2.22E-21
1274.83	3.34E-19	2.08E-21
1274.35	3.32E-19	2.06E-21
1273.86	3.30E-19	2.19E-21
1273.38	3.29E-19	2.17E-21
1272.90	3.28E-19	1.97E-21
1272.42	3.28E-19	1.76E-21
1271.94	3.29E-19	1.69E-21
1271.45	3.31E-19	1.84E-21
1270.97	3.33E-19	2.16E-21
1270.49	3.36E-19	2.17E-21
1270.01	3.39E-19	2.01E-21
1269.52	3.44E-19	2.08E-21
1269.04	3.49E-19	2.28E-21
1268.56	3.56E-19	2.45E-21
1268.08	3.64E-19	2.57E-21
1267.60	3.73E-19	2.76E-21
1267.11	3.83E-19	3.07E-21
1266.63	3.95E-19	3.29E-21
1266.15	4.10E-19	3.59E-21
1265.67	4.27E-19	4.01E-21
1265.19	4.46E-19	4.42E-21
1264.70	4.69E-19	4.96E-21
1264.22	4.94E-19	5.71E-21
1263.74	5.22E-19	6.41E-21
1263.26	5.52E-19	7.07E-21
1262.77	5.84E-19	7.91E-21
1262.29	6.19E-19	8.77E-21
1261.81	6.57E-19	9.53E-21
1261.33	6.97E-19	1.04E-20
1260.85	7.39E-19	1.13E-20
1260.36	7.85E-19	1.22E-20
1259.88	8.32E-19	1.32E-20
1259.40	8.79E-19	1.42E-20
1258.92	9.28E-19	1.52E-20
1258.44	9.77E-19	1.61E-20
1257.95	1.03E-18	1.71E-20
1257.47	1.08E-18	1.81E-20
1256.99	1.13E-18	1.90E-20
1256.51	1.18E-18	1.99E-20

1256.02	1.23E-18	2.08E-20
1255.54	1.28E-18	2.18E-20
1255.06	1.34E-18	2.29E-20
1254.58	1.40E-18	2.43E-20
1254.10	1.46E-18	2.57E-20
1253.61	1.53E-18	2.69E-20
1253.13	1.60E-18	2.80E-20
1252.65	1.67E-18	2.90E-20
1252.17	1.74E-18	2.98E-20
1251.68	1.80E-18	3.02E-20
1251.20	1.85E-18	3.03E-20
1250.72	1.90E-18	2.99E-20
1250.24	1.93E-18	2.93E-20
1249.76	1.96E-18	2.90E-20
1249.27	1.99E-18	2.87E-20
1248.79	2.02E-18	2.85E-20
1248.31	2.05E-18	2.83E-20
1247.83	2.09E-18	2.83E-20
1247.35	2.12E-18	2.87E-20
1246.86	2.16E-18	2.92E-20
1246.38	2.19E-18	2.95E-20
1245.90	2.23E-18	2.98E-20
1245.42	2.26E-18	2.99E-20
1244.93	2.29E-18	3.00E-20
1244.45	2.32E-18	3.01E-20
1243.97	2.34E-18	3.00E-20
1243.49	2.36E-18	3.01E-20
1243.01	2.38E-18	3.01E-20
1242.52	2.40E-18	3.02E-20
1242.04	2.42E-18	3.05E-20
1241.56	2.44E-18	3.11E-20
1241.08	2.47E-18	3.18E-20
1240.60	2.50E-18	3.23E-20
1240.11	2.52E-18	3.27E-20
1239.63	2.55E-18	3.30E-20
1239.15	2.56E-18	3.32E-20
1238.67	2.56E-18	3.31E-20
1238.18	2.54E-18	3.26E-20
1237.70	2.52E-18	3.19E-20
1237.22	2.48E-18	3.11E-20
1236.74	2.44E-18	2.99E-20
1236.26	2.40E-18	2.87E-20
1235.77	2.36E-18	2.79E-20
1235.29	2.32E-18	2.73E-20
1234.81	2.28E-18	2.69E-20
1234.33	2.24E-18	2.62E-20
1233.85	2.20E-18	2.55E-20
1233.36	2.16E-18	2.48E-20
1232.88	2.13E-18	2.42E-20
1232.40	2.09E-18	2.36E-20
1231.92	2.07E-18	2.35E-20
1231.43	2.05E-18	2.39E-20
1230.95	2.04E-18	2.39E-20
1230.47	2.03E-18	2.35E-20
1229.99	2.02E-18	2.30E-20
1229.51	2.00E-18	2.26E-20
1229.02	1.98E-18	2.25E-20
1228.54	1.96E-18	2.22E-20
1228.06	1.93E-18	2.19E-20
1227.58	1.89E-18	2.14E-20
1227.09	1.86E-18	2.07E-20
1226.61	1.82E-18	2.03E-20

1226.13	1.79E-18	2.05E-20
1225.65	1.76E-18	2.07E-20
1225.17	1.73E-18	2.02E-20
1224.68	1.70E-18	1.94E-20
1224.20	1.66E-18	1.86E-20
1223.72	1.62E-18	1.76E-20
1223.24	1.57E-18	1.68E-20
1222.76	1.52E-18	1.60E-20
1222.27	1.47E-18	1.56E-20
1221.79	1.42E-18	1.52E-20
1221.31	1.37E-18	1.51E-20
1220.83	1.33E-18	1.49E-20
1220.34	1.29E-18	1.44E-20
1219.86	1.25E-18	1.36E-20
1219.38	1.22E-18	1.30E-20
1218.90	1.19E-18	1.29E-20
1218.42	1.17E-18	1.27E-20
1217.93	1.15E-18	1.22E-20
1217.45	1.13E-18	1.15E-20
1216.97	1.11E-18	1.16E-20
1216.49	1.10E-18	1.19E-20
1216.01	1.09E-18	1.21E-20
1215.52	1.08E-18	1.24E-20
1215.04	1.07E-18	1.24E-20
1214.56	1.07E-18	1.22E-20
1214.08	1.06E-18	1.22E-20
1213.59	1.06E-18	1.25E-20
1213.11	1.05E-18	1.27E-20
1212.63	1.04E-18	1.25E-20
1212.15	1.03E-18	1.23E-20
1211.67	1.02E-18	1.21E-20
1211.18	1.00E-18	1.19E-20
1210.70	9.80E-19	1.17E-20
1210.22	9.57E-19	1.14E-20
1209.74	9.33E-19	1.09E-20
1209.25	9.09E-19	1.05E-20
1208.77	8.84E-19	1.02E-20
1208.29	8.59E-19	9.94E-21
1207.81	8.34E-19	9.57E-21
1207.33	8.08E-19	8.86E-21
1206.84	7.82E-19	8.20E-21
1206.36	7.56E-19	7.96E-21
1205.88	7.31E-19	8.00E-21
1205.40	7.05E-19	7.88E-21
1204.92	6.80E-19	7.26E-21
1204.43	6.56E-19	6.78E-21
1203.95	6.34E-19	6.44E-21
1203.47	6.14E-19	6.12E-21
1202.99	5.96E-19	5.48E-21
1202.50	5.82E-19	5.11E-21
1202.02	5.71E-19	4.97E-21
1201.54	5.62E-19	4.85E-21
1201.06	5.56E-19	4.81E-21
1200.58	5.53E-19	5.20E-21
1200.09	5.53E-19	5.66E-21
1199.61	5.55E-19	5.69E-21
1199.13	5.59E-19	5.72E-21
1198.65	5.66E-19	6.06E-21
1198.17	5.77E-19	6.35E-21
1197.68	5.89E-19	6.50E-21
1197.20	6.04E-19	6.86E-21
1196.72	6.21E-19	7.48E-21

1196.24	6.40E-19	8.33E-21
1195.75	6.62E-19	9.00E-21
1195.27	6.85E-19	9.52E-21
1194.79	7.09E-19	1.01E-20
1194.31	7.36E-19	1.07E-20
1193.83	7.63E-19	1.11E-20
1193.34	7.90E-19	1.16E-20
1192.86	8.17E-19	1.22E-20
1192.38	8.40E-19	1.28E-20
1191.90	8.61E-19	1.32E-20
1191.42	8.78E-19	1.35E-20
1190.93	8.93E-19	1.36E-20
1190.45	9.09E-19	1.37E-20
1189.97	9.26E-19	1.39E-20
1189.49	9.45E-19	1.42E-20
1189.00	9.63E-19	1.43E-20
1188.52	9.77E-19	1.43E-20
1188.04	9.84E-19	1.43E-20
1187.56	9.84E-19	1.41E-20
1187.08	9.77E-19	1.35E-20
1186.59	9.64E-19	1.26E-20
1186.11	9.47E-19	1.19E-20
1185.63	9.27E-19	1.16E-20
1185.15	9.05E-19	1.12E-20
1184.66	8.81E-19	1.05E-20
1184.18	8.56E-19	1.00E-20
1183.70	8.30E-19	9.45E-21
1183.22	8.03E-19	8.54E-21
1182.74	7.76E-19	7.56E-21
1182.25	7.48E-19	7.10E-21
1181.77	7.21E-19	6.71E-21
1181.29	6.93E-19	6.04E-21
1180.81	6.66E-19	5.43E-21
1180.33	6.39E-19	5.04E-21
1179.84	6.12E-19	5.07E-21
1179.36	5.85E-19	4.97E-21
1178.88	5.58E-19	4.59E-21
1178.40	5.31E-19	4.22E-21
1177.91	5.05E-19	4.20E-21
1177.43	4.79E-19	4.36E-21
1176.95	4.55E-19	4.46E-21
1176.47	4.30E-19	4.21E-21
1175.99	4.07E-19	3.86E-21
1175.50	3.86E-19	3.78E-21
1175.02	3.65E-19	3.57E-21
1174.54	3.46E-19	3.06E-21
1174.06	3.28E-19	2.78E-21
1173.58	3.12E-19	2.50E-21
1173.09	2.97E-19	2.17E-21
1172.61	2.83E-19	2.05E-21
1172.13	2.70E-19	2.21E-21
1171.65	2.58E-19	2.41E-21
1171.16	2.47E-19	2.35E-21
1170.68	2.37E-19	2.08E-21
1170.20	2.27E-19	1.62E-21
1169.72	2.19E-19	1.60E-21
1169.24	2.10E-19	1.63E-21
1168.75	2.03E-19	1.47E-21
1168.27	1.95E-19	1.42E-21
1167.79	1.89E-19	1.61E-21
1167.31	1.83E-19	2.24E-21
1166.82	1.77E-19	2.62E-21

1166.34	1.71E-19	2.02E-21
1165.86	1.66E-19	1.40E-21
1165.38	1.62E-19	1.36E-21
1164.90	1.58E-19	1.15E-21
1164.41	1.54E-19	6.73E-22
1163.93	1.50E-19	3.77E-22
1163.45	1.47E-19	5.37E-22
1162.97	1.45E-19	1.30E-21
1162.49	1.44E-19	2.15E-21
1162.00	1.42E-19	1.75E-21
1161.52	1.40E-19	7.59E-22
1161.04	1.39E-19	4.15E-22
1160.56	1.39E-19	5.67E-22
1160.07	1.40E-19	1.05E-21
1159.59	1.41E-19	1.37E-21
1159.11	1.43E-19	1.30E-21
1158.63	1.45E-19	1.13E-21
1158.15	1.49E-19	1.38E-21
1157.66	1.55E-19	2.22E-21
1157.18	1.61E-19	2.82E-21
1156.70	1.67E-19	2.82E-21
1156.22	1.75E-19	2.28E-21
1155.74	1.84E-19	1.98E-21
1155.25	1.93E-19	1.97E-21
1154.77	2.04E-19	2.16E-21
1154.29	2.15E-19	2.54E-21
1153.81	2.27E-19	2.86E-21
1153.32	2.39E-19	3.05E-21
1152.84	2.51E-19	3.35E-21
1152.36	2.63E-19	3.80E-21
1151.88	2.74E-19	3.94E-21
1151.40	2.86E-19	3.81E-21
1150.91	2.97E-19	3.91E-21
1150.43	3.09E-19	4.34E-21
1149.95	3.21E-19	4.67E-21
1149.47	3.33E-19	4.86E-21
1148.99	3.47E-19	4.92E-21
1148.50	3.60E-19	5.04E-21
1148.02	3.75E-19	5.31E-21
1147.54	3.90E-19	5.63E-21
1147.06	4.04E-19	5.82E-21
1146.57	4.16E-19	6.02E-21
1146.09	4.26E-19	6.08E-21
1145.61	4.33E-19	5.86E-21
1145.13	4.37E-19	5.71E-21
1144.65	4.39E-19	5.72E-21
1144.16	4.39E-19	5.66E-21
1143.68	4.36E-19	5.23E-21
1143.20	4.32E-19	4.69E-21
1142.72	4.27E-19	4.23E-21
1142.23	4.21E-19	3.99E-21
1141.75	4.15E-19	4.01E-21
1141.27	4.09E-19	4.06E-21
1140.79	4.04E-19	3.87E-21
1140.31	4.00E-19	3.58E-21
1139.82	3.97E-19	3.32E-21
1139.34	3.95E-19	2.98E-21
1138.86	3.94E-19	2.80E-21
1138.38	3.95E-19	2.92E-21
1137.90	3.97E-19	3.11E-21
1137.41	4.00E-19	3.18E-21
1136.93	4.06E-19	3.32E-21

1136.45	4.15E-19	3.38E-21
1135.97	4.27E-19	3.13E-21
1135.48	4.42E-19	3.18E-21
1135.00	4.62E-19	3.80E-21
1134.52	4.84E-19	4.68E-21
1134.04	5.08E-19	5.45E-21
1133.56	5.36E-19	6.21E-21
1133.07	5.65E-19	6.92E-21
1132.59	5.95E-19	7.52E-21
1132.11	6.26E-19	8.19E-21
1131.63	6.56E-19	9.03E-21
1131.15	6.85E-19	1.00E-20
1130.66	7.12E-19	1.09E-20
1130.18	7.38E-19	1.16E-20
1129.70	7.63E-19	1.22E-20
1129.22	7.86E-19	1.28E-20
1128.73	8.08E-19	1.31E-20
1128.25	8.30E-19	1.36E-20
1127.77	8.53E-19	1.42E-20
1127.29	8.75E-19	1.48E-20
1126.81	8.93E-19	1.53E-20
1126.32	9.07E-19	1.53E-20
1125.84	9.15E-19	1.51E-20
1125.36	9.17E-19	1.49E-20
1124.88	9.13E-19	1.48E-20
1124.39	9.04E-19	1.44E-20
1123.91	8.90E-19	1.37E-20
1123.43	8.71E-19	1.29E-20
1122.95	8.50E-19	1.24E-20
1122.47	8.26E-19	1.21E-20
1121.98	8.02E-19	1.16E-20
1121.50	7.78E-19	1.11E-20
1121.02	7.53E-19	1.07E-20
1120.54	7.28E-19	9.94E-21
1120.06	7.02E-19	9.14E-21
1119.57	6.75E-19	8.48E-21
1119.09	6.48E-19	7.75E-21
1118.61	6.21E-19	6.97E-21
1118.13	5.94E-19	6.29E-21
1117.64	5.68E-19	6.02E-21
1117.16	5.42E-19	6.10E-21
1116.68	5.17E-19	5.92E-21
1116.20	4.94E-19	5.23E-21
1115.72	4.73E-19	4.71E-21
1115.23	4.54E-19	4.76E-21
1114.75	4.37E-19	4.88E-21
1114.27	4.23E-19	4.39E-21
1113.79	4.12E-19	3.93E-21
1113.31	4.04E-19	3.79E-21
1112.82	4.00E-19	3.63E-21
1112.34	3.99E-19	3.81E-21
1111.86	4.00E-19	4.11E-21
1111.38	4.04E-19	4.19E-21
1110.89	4.10E-19	4.25E-21
1110.41	4.17E-19	4.75E-21
1109.93	4.25E-19	5.12E-21
1109.45	4.32E-19	4.96E-21
1108.97	4.38E-19	4.73E-21
1108.48	4.43E-19	4.67E-21
1108.00	4.47E-19	4.77E-21
1107.52	4.50E-19	5.13E-21
1107.04	4.52E-19	5.59E-21

1106.56	4.54E-19	5.85E-21
1106.07	4.58E-19	5.68E-21
1105.59	4.63E-19	5.36E-21
1105.11	4.70E-19	5.58E-21
1104.63	4.77E-19	6.24E-21
1104.14	4.81E-19	6.67E-21
1103.66	4.82E-19	6.52E-21
1103.18	4.80E-19	6.33E-21
1102.70	4.76E-19	6.14E-21
1102.22	4.71E-19	5.78E-21
1101.73	4.63E-19	5.54E-21
1101.25	4.53E-19	5.41E-21
1100.77	4.41E-19	5.23E-21
1100.29	4.28E-19	5.05E-21
1099.80	4.15E-19	4.85E-21
1099.32	4.01E-19	4.66E-21
1098.84	3.87E-19	4.54E-21
1098.36	3.74E-19	4.48E-21
1097.88	3.60E-19	4.52E-21
1097.39	3.47E-19	4.54E-21
1096.91	3.33E-19	4.20E-21
1096.43	3.19E-19	3.63E-21
1095.95	3.04E-19	3.64E-21
1095.47	2.90E-19	3.32E-21
1094.98	2.75E-19	2.43E-21
1094.50	2.60E-19	1.76E-21
1094.02	2.46E-19	1.95E-21
1093.54	2.33E-19	2.61E-21
1093.05	2.19E-19	2.66E-21
1092.57	2.06E-19	1.96E-21
1092.09	1.94E-19	1.65E-21
1091.61	1.83E-19	1.62E-21
1091.13	1.72E-19	1.16E-21
1090.64	1.63E-19	1.02E-21
1090.16	1.54E-19	1.17E-21
1089.68	1.45E-19	1.09E-21
1089.20	1.37E-19	9.57E-22
1088.72	1.30E-19	1.48E-21
1088.23	1.24E-19	1.98E-21
1087.75	1.18E-19	1.63E-21
1087.27	1.12E-19	9.45E-22
1086.79	1.06E-19	1.66E-21
1086.30	1.02E-19	2.11E-21
1085.82	9.74E-20	1.71E-21
1085.34	9.36E-20	8.54E-22
1084.86	9.02E-20	5.84E-22
1084.38	8.69E-20	1.03E-21
1083.89	8.39E-20	1.43E-21
1083.41	8.07E-20	1.22E-21
1082.93	7.75E-20	7.88E-22
1082.45	7.48E-20	6.94E-22
1081.96	7.23E-20	8.22E-22
1081.48	6.99E-20	6.35E-22
1081.00	6.77E-20	2.15E-22
1080.52	6.56E-20	3.06E-22
1080.04	6.37E-20	3.77E-22
1079.55	6.20E-20	7.64E-22
1079.07	6.07E-20	1.05E-21
1078.59	5.91E-20	9.02E-22
1078.11	5.71E-20	6.23E-22
1077.63	5.53E-20	1.49E-21
1077.14	5.37E-20	2.13E-21

1076.66	5.25E-20	2.17E-21
1076.18	5.16E-20	1.51E-21
1075.70	5.07E-20	1.27E-21
1075.21	4.94E-20	1.05E-21
1074.73	4.80E-20	7.84E-22
1074.25	4.71E-20	7.42E-22
1073.77	4.65E-20	7.69E-22
1073.29	4.59E-20	8.64E-22
1072.80	4.52E-20	8.76E-22
1072.32	4.46E-20	8.26E-22
1071.84	4.40E-20	7.88E-22
1071.36	4.33E-20	5.57E-22
1070.88	4.27E-20	4.81E-22
1070.39	4.26E-20	9.70E-22
1069.91	4.27E-20	1.43E-21
1069.43	4.29E-20	1.58E-21
1068.95	4.28E-20	1.37E-21
1068.46	4.24E-20	1.18E-21
1067.98	4.25E-20	8.76E-22
1067.50	4.29E-20	6.03E-22
1067.02	4.34E-20	7.78E-22
1066.54	4.35E-20	7.42E-22
1066.05	4.34E-20	1.53E-21
1065.57	4.35E-20	2.21E-21
1065.09	4.41E-20	2.23E-21
1064.61	4.52E-20	1.55E-21
1064.13	4.65E-20	8.07E-22
1063.64	4.74E-20	6.86E-22
1063.16	4.82E-20	9.41E-22
1062.68	4.90E-20	1.47E-21
1062.20	4.99E-20	1.84E-21
1061.71	5.09E-20	1.95E-21
1061.23	5.18E-20	2.04E-21
1060.75	5.26E-20	2.06E-21
1060.27	5.36E-20	1.16E-21
1059.79	5.45E-20	4.04E-22
1059.30	5.51E-20	5.94E-22
1058.82	5.59E-20	7.72E-22
1058.34	5.70E-20	6.19E-22
1057.86	5.82E-20	6.58E-22
1057.37	5.95E-20	8.41E-22
1056.89	6.05E-20	9.62E-22
1056.41	6.15E-20	9.41E-22
1055.93	6.26E-20	9.20E-22
1055.45	6.35E-20	8.26E-22
1054.96	6.37E-20	8.27E-22
1054.48	6.36E-20	1.19E-21
1054.00	6.36E-20	1.55E-21
1053.52	6.37E-20	1.63E-21
1053.04	6.38E-20	1.81E-21
1052.55	6.40E-20	1.54E-21
1052.07	6.43E-20	6.58E-22
1051.59	6.45E-20	3.13E-22
1051.11	6.43E-20	9.09E-22
1050.62	6.40E-20	2.03E-21
1050.14	6.37E-20	2.53E-21
1049.66	6.39E-20	1.77E-21
1049.18	6.42E-20	9.59E-22
1048.70	6.42E-20	8.97E-22
1048.21	6.42E-20	7.84E-22
1047.73	6.41E-20	7.84E-22
1047.25	6.40E-20	8.51E-22

1046.77	6.37E-20	8.72E-22
1046.29	6.36E-20	7.86E-22
1045.80	6.33E-20	5.98E-22
1045.32	6.29E-20	6.34E-22
1044.84	6.25E-20	8.04E-22
1044.36	6.20E-20	1.06E-21
1043.87	6.13E-20	1.68E-21
1043.39	6.07E-20	2.12E-21
1042.91	6.05E-20	1.80E-21
1042.43	6.06E-20	1.05E-21
1041.95	6.02E-20	8.24E-22
1041.46	5.97E-20	5.50E-22
1040.98	5.93E-20	6.97E-22
1040.50	5.89E-20	8.29E-22
1040.02	5.81E-20	1.44E-21
1039.53	5.76E-20	1.41E-21
1039.05	5.77E-20	8.52E-22
1038.57	5.77E-20	1.03E-21
1038.09	5.74E-20	1.08E-21
1037.61	5.69E-20	9.99E-22
1037.12	5.66E-20	1.36E-21
1036.64	5.66E-20	1.38E-21
1036.16	5.67E-20	1.36E-21
1035.68	5.72E-20	1.53E-21
1035.20	5.78E-20	1.96E-21
1034.71	5.85E-20	2.55E-21
1034.23	5.96E-20	2.34E-21
1033.75	6.12E-20	1.47E-21
1033.27	6.28E-20	1.08E-21
1032.78	6.44E-20	1.02E-21
1032.30	6.63E-20	9.42E-22
1031.82	6.86E-20	9.18E-22
1031.34	7.12E-20	7.59E-22
1030.86	7.39E-20	4.80E-22
1030.37	7.70E-20	5.81E-22
1029.89	8.06E-20	8.02E-22
1029.41	8.40E-20	7.88E-22
1028.93	8.72E-20	1.52E-21
1028.45	9.09E-20	2.06E-21
1027.96	9.54E-20	1.41E-21
1027.48	1.00E-19	8.02E-22
1027.00	1.04E-19	7.15E-22
1026.52	1.08E-19	1.03E-21
1026.03	1.12E-19	1.24E-21
1025.55	1.17E-19	1.34E-21
1025.07	1.22E-19	1.31E-21
1024.59	1.27E-19	1.35E-21
1024.11	1.31E-19	1.42E-21
1023.62	1.35E-19	1.61E-21
1023.14	1.40E-19	1.75E-21
1022.66	1.45E-19	1.95E-21
1022.18	1.51E-19	2.21E-21
1021.70	1.55E-19	2.37E-21
1021.21	1.59E-19	2.38E-21
1020.73	1.61E-19	2.22E-21
1020.25	1.62E-19	2.05E-21
1019.77	1.64E-19	2.52E-21
1019.28	1.65E-19	2.96E-21
1018.80	1.64E-19	2.60E-21
1018.32	1.63E-19	2.00E-21
1017.84	1.61E-19	1.97E-21
1017.36	1.60E-19	2.03E-21

1016.87	1.58E-19	1.91E-21
1016.39	1.56E-19	1.83E-21
1015.91	1.53E-19	1.72E-21
1015.43	1.51E-19	1.45E-21
1014.94	1.48E-19	1.61E-21
1014.46	1.44E-19	1.95E-21
1013.98	1.39E-19	1.82E-21
1013.50	1.34E-19	1.01E-21
1013.02	1.29E-19	8.89E-22
1012.53	1.24E-19	1.63E-21
1012.05	1.19E-19	1.47E-21
1011.57	1.15E-19	9.78E-22
1011.09	1.11E-19	9.06E-22
1010.61	1.06E-19	9.10E-22
1010.12	1.01E-19	1.14E-21
1009.64	9.64E-20	1.39E-21
1009.16	9.23E-20	9.40E-22
1008.68	8.85E-20	4.82E-22
1008.19	8.46E-20	5.36E-22
1007.71	8.07E-20	4.64E-22
1007.23	7.71E-20	4.60E-22
1006.75	7.39E-20	5.49E-22
1006.27	7.14E-20	5.09E-22
1005.78	6.91E-20	1.40E-21
1005.30	6.71E-20	1.54E-21
1004.82	6.51E-20	8.80E-22
1004.34	6.33E-20	6.43E-22
1003.86	6.21E-20	9.00E-22
1003.37	6.15E-20	1.15E-21
1002.89	6.15E-20	1.10E-21
1002.41	6.22E-20	6.70E-22
1001.93	6.27E-20	8.74E-22
1001.44	6.34E-20	1.36E-21
1000.96	6.46E-20	1.78E-21
1000.48	6.64E-20	1.56E-21
1000.00	6.85E-20	1.01E-21
999.52	7.03E-20	8.98E-22
999.03	7.19E-20	1.10E-21
998.55	7.38E-20	6.44E-22
998.07	7.60E-20	4.04E-22
997.59	7.80E-20	5.43E-22
997.10	7.98E-20	5.31E-22
996.62	8.15E-20	6.41E-22
996.14	8.37E-20	7.42E-22
995.66	8.67E-20	6.30E-22
995.18	9.06E-20	5.55E-22
994.69	9.53E-20	8.02E-22
994.21	1.01E-19	1.21E-21
993.73	1.08E-19	1.09E-21
993.25	1.15E-19	7.88E-22
992.77	1.23E-19	6.31E-22
992.28	1.32E-19	8.69E-22
991.80	1.43E-19	6.94E-22
991.32	1.56E-19	5.36E-22
990.84	1.72E-19	6.72E-22
990.35	1.90E-19	1.06E-21
989.87	2.10E-19	1.54E-21
989.39	2.32E-19	1.85E-21
988.91	2.53E-19	2.00E-21
988.43	2.74E-19	2.27E-21
987.94	2.93E-19	2.70E-21
987.46	3.08E-19	3.29E-21

986.98	3.20E-19	3.88E-21
986.50	3.27E-19	4.19E-21
986.02	3.30E-19	4.14E-21
985.53	3.30E-19	4.00E-21
985.05	3.31E-19	4.01E-21
984.57	3.38E-19	3.96E-21
984.09	3.62E-19	4.10E-21
983.60	4.06E-19	4.65E-21
983.12	4.51E-19	5.36E-21
982.64	4.66E-19	5.46E-21
982.16	4.54E-19	5.24E-21
981.68	4.40E-19	5.35E-21
981.19	4.34E-19	5.32E-21
980.71	4.31E-19	5.06E-21
980.23	4.35E-19	4.99E-21
979.75	4.51E-19	5.44E-21
979.27	4.79E-19	6.27E-21
978.78	5.13E-19	6.91E-21
978.30	5.51E-19	7.32E-21
977.82	5.89E-19	7.84E-21
977.34	6.26E-19	8.48E-21
976.85	6.59E-19	9.07E-21
976.37	6.87E-19	9.47E-21
975.89	7.10E-19	9.73E-21
975.41	7.25E-19	9.84E-21
974.93	7.34E-19	9.74E-21
974.44	7.39E-19	9.51E-21
973.96	7.42E-19	9.52E-21
973.48	7.48E-19	9.78E-21
973.00	7.61E-19	1.02E-20
972.51	7.86E-19	1.06E-20
972.03	8.23E-19	1.11E-20
971.55	8.63E-19	1.19E-20
971.07	8.97E-19	1.28E-20
970.59	9.20E-19	1.32E-20
970.10	9.31E-19	1.32E-20
969.62	9.35E-19	1.29E-20
969.14	9.31E-19	1.22E-20
968.66	9.21E-19	1.19E-20
968.18	9.08E-19	1.18E-20
967.69	8.93E-19	1.17E-20
967.21	8.79E-19	1.15E-20
966.73	8.65E-19	1.13E-20
966.25	8.53E-19	1.09E-20
965.76	8.40E-19	1.05E-20
965.28	8.36E-19	1.02E-20
964.80	8.53E-19	9.95E-21
964.32	8.86E-19	1.03E-20
963.84	8.91E-19	1.06E-20
963.35	8.39E-19	1.01E-20
962.87	7.61E-19	9.16E-21
962.39	6.96E-19	8.35E-21
961.91	6.50E-19	7.71E-21
961.43	6.16E-19	7.02E-21
960.94	5.89E-19	6.49E-21
960.46	5.66E-19	6.26E-21
959.98	5.43E-19	6.25E-21
959.50	5.21E-19	6.41E-21
959.01	4.98E-19	6.64E-21
958.53	4.74E-19	6.76E-21
958.05	4.51E-19	6.51E-21
957.57	4.27E-19	5.77E-21

957.09	4.02E-19	5.29E-21
956.60	3.75E-19	5.09E-21
956.12	3.49E-19	4.76E-21
955.64	3.25E-19	4.33E-21
955.16	3.04E-19	3.48E-21
954.67	2.85E-19	1.92E-21
954.19	2.68E-19	9.69E-22
953.71	2.54E-19	1.13E-21
953.23	2.41E-19	1.48E-21
952.75	2.30E-19	1.50E-21
952.26	2.20E-19	1.58E-21
951.78	2.11E-19	1.46E-21
951.30	2.03E-19	1.48E-21
950.82	1.96E-19	1.81E-21
950.34	1.91E-19	2.31E-21
949.85	1.87E-19	2.52E-21
949.37	1.85E-19	2.35E-21
948.89	1.84E-19	2.05E-21
948.41	1.85E-19	1.76E-21
947.92	1.90E-19	1.45E-21
947.44	1.97E-19	1.11E-21
946.96	2.09E-19	1.37E-21
946.48	2.25E-19	1.95E-21
946.00	2.47E-19	2.59E-21
945.51	2.75E-19	3.36E-21
945.03	3.08E-19	4.25E-21
944.55	3.47E-19	5.30E-21
944.07	3.91E-19	6.42E-21
943.59	4.39E-19	7.63E-21
943.10	4.88E-19	8.88E-21
942.62	5.37E-19	1.01E-20
942.14	5.84E-19	1.12E-20
941.66	6.27E-19	1.24E-20
941.17	6.67E-19	1.34E-20
940.69	7.04E-19	1.40E-20
940.21	7.39E-19	1.43E-20
939.73	7.72E-19	1.44E-20
939.25	8.04E-19	1.48E-20
938.76	8.35E-19	1.56E-20
938.28	8.62E-19	1.62E-20
937.80	8.83E-19	1.65E-20
937.32	8.99E-19	1.66E-20
936.84	9.08E-19	1.64E-20
936.35	9.13E-19	1.61E-20
935.87	9.14E-19	1.59E-20
935.39	9.13E-19	1.59E-20
934.91	9.08E-19	1.59E-20
934.42	9.01E-19	1.55E-20
933.94	8.90E-19	1.48E-20
933.46	8.75E-19	1.41E-20
932.98	8.56E-19	1.34E-20
932.50	8.33E-19	1.25E-20
932.01	8.06E-19	1.14E-20
931.53	7.78E-19	1.05E-20
931.05	7.48E-19	1.01E-20
930.57	7.14E-19	9.33E-21
930.08	6.79E-19	8.21E-21
929.60	6.42E-19	7.26E-21
929.12	6.04E-19	7.05E-21
928.64	5.64E-19	7.04E-21
928.16	5.24E-19	6.30E-21
927.67	4.84E-19	5.57E-21

927.19	4.45E-19	5.37E-21
926.71	4.07E-19	5.04E-21
926.23	3.71E-19	4.27E-21
925.75	3.37E-19	3.83E-21
925.26	3.05E-19	4.36E-21
924.78	2.77E-19	5.03E-21
924.30	2.51E-19	4.93E-21
923.82	2.28E-19	4.00E-21
923.33	2.06E-19	3.40E-21
922.85	1.87E-19	2.90E-21
922.37	1.70E-19	2.20E-21
921.89	1.55E-19	2.04E-21
921.41	1.42E-19	2.47E-21
920.92	1.31E-19	2.53E-21
920.44	1.21E-19	1.99E-21
919.96	1.12E-19	1.48E-21
919.48	1.05E-19	1.47E-21
919.00	9.82E-20	1.91E-21
918.51	9.24E-20	2.33E-21
918.03	8.70E-20	2.24E-21
917.55	8.15E-20	1.40E-21
917.07	7.61E-20	7.81E-22
916.58	7.14E-20	4.67E-22
916.10	6.75E-20	4.93E-22
915.62	6.43E-20	9.78E-22
915.14	6.14E-20	1.43E-21
914.66	5.83E-20	1.56E-21
914.17	5.53E-20	1.29E-21
913.69	5.24E-20	8.64E-22
913.21	4.98E-20	6.56E-22
912.73	4.73E-20	7.30E-22
912.24	4.49E-20	7.91E-22
911.76	4.27E-20	9.73E-22
911.28	4.04E-20	1.37E-21
910.80	3.80E-20	1.58E-21
910.32	3.57E-20	1.60E-21
909.83	3.38E-20	1.65E-21
909.35	3.25E-20	1.43E-21
908.87	3.14E-20	1.23E-21
908.39	3.02E-20	1.17E-21
907.91	2.89E-20	1.01E-21
907.42	2.76E-20	1.03E-21
906.94	2.66E-20	1.17E-21
906.46	2.60E-20	1.20E-21
905.98	2.52E-20	1.37E-21
905.49	2.41E-20	1.00E-21
905.01	2.28E-20	7.76E-22
904.53	2.19E-20	7.86E-22
904.05	2.13E-20	7.21E-22
903.57	2.09E-20	8.36E-22
903.08	2.04E-20	7.21E-22
902.60	1.99E-20	1.06E-21
902.12	1.93E-20	1.22E-21
901.64	1.88E-20	1.06E-21
901.16	1.81E-20	1.10E-21
900.67	1.74E-20	9.38E-22
900.19	1.66E-20	1.08E-21
899.71	1.60E-20	1.86E-21
899.23	1.56E-20	2.13E-21
898.74	1.57E-20	1.79E-21
898.26	1.55E-20	1.55E-21
897.78	1.49E-20	1.33E-21

897.30	1.42E-20	9.90E-22
896.82	1.37E-20	9.86E-22
896.33	1.33E-20	1.41E-21
895.85	1.30E-20	1.54E-21
895.37	1.29E-20	1.37E-21
894.89	1.25E-20	1.24E-21
894.41	1.19E-20	1.39E-21
893.92	1.17E-20	1.37E-21
893.44	1.16E-20	1.08E-21
892.96	1.13E-20	1.23E-21
892.48	1.08E-20	9.55E-22
891.99	1.02E-20	8.23E-22
891.51	9.82E-21	9.94E-22
891.03	9.62E-21	1.05E-21
890.55	9.62E-21	1.06E-21
890.07	9.71E-21	1.23E-21
889.58	9.47E-21	1.22E-21
889.10	9.12E-21	8.95E-22
888.62	9.03E-21	9.97E-22
888.14	8.79E-21	1.21E-21
887.65	8.22E-21	1.60E-21
887.17	7.76E-21	2.10E-21
886.69	7.69E-21	1.69E-21
886.21	7.72E-21	9.70E-22
885.73	7.72E-21	8.55E-22
885.24	7.52E-21	1.56E-21
884.76	7.13E-21	2.29E-21
884.28	6.99E-21	2.08E-21
883.80	7.16E-21	1.43E-21
883.32	7.40E-21	1.19E-21
882.83	7.37E-21	1.19E-21
882.35	6.97E-21	1.23E-21
881.87	6.66E-21	1.06E-21
881.39	6.75E-21	1.43E-21
880.90	7.04E-21	1.79E-21
880.42	7.01E-21	1.48E-21
879.94	6.69E-21	1.13E-21
879.46	6.44E-21	1.20E-21
878.98	6.14E-21	1.09E-21
878.49	5.82E-21	8.59E-22
878.01	5.88E-21	1.02E-21
877.53	6.12E-21	1.38E-21
877.05	5.83E-21	1.72E-21
876.57	5.40E-21	2.09E-21
876.08	5.22E-21	2.41E-21
875.60	5.12E-21	2.60E-21
875.12	5.08E-21	2.07E-21
874.64	5.03E-21	1.11E-21
874.15	5.07E-21	1.04E-21
873.67	5.25E-21	1.52E-21
873.19	5.53E-21	1.87E-21
872.71	5.61E-21	1.96E-21
872.23	5.38E-21	1.92E-21
871.74	4.75E-21	2.31E-21
871.26	3.81E-21	3.17E-21
870.78	3.21E-21	3.34E-21
870.30	3.36E-21	2.63E-21
869.81	3.96E-21	1.68E-21
869.33	4.58E-21	1.14E-21
868.85	4.85E-21	1.58E-21
868.37	4.63E-21	1.72E-21
867.89	4.26E-21	1.79E-21

867.40	4.11E-21	1.80E-21
866.92	4.14E-21	1.88E-21
866.44	3.92E-21	2.15E-21
865.96	3.82E-21	2.05E-21
865.48	4.04E-21	1.65E-21
864.99	4.26E-21	1.65E-21
864.51	4.20E-21	1.66E-21
864.03	4.04E-21	1.20E-21
863.55	3.92E-21	8.38E-22
863.06	3.92E-21	1.02E-21
862.58	3.87E-21	1.39E-21
862.10	3.64E-21	1.69E-21
861.62	3.46E-21	1.83E-21
861.14	3.58E-21	1.79E-21
860.65	3.60E-21	1.69E-21
860.17	3.10E-21	1.71E-21
859.69	2.66E-21	1.69E-21
859.21	2.66E-21	1.89E-21
858.73	2.71E-21	2.22E-21
858.24	2.64E-21	2.17E-21
857.76	2.68E-21	1.80E-21
857.28	2.94E-21	1.47E-21
856.80	3.04E-21	1.36E-21
856.31	3.03E-21	1.29E-21
855.83	3.12E-21	9.34E-22
855.35	3.28E-21	6.50E-22
854.87	3.43E-21	8.86E-22
854.39	3.64E-21	1.33E-21
853.90	3.80E-21	1.60E-21
853.42	3.46E-21	1.96E-21
852.94	2.69E-21	2.37E-21
852.46	2.38E-21	2.19E-21
851.98	2.62E-21	1.37E-21
851.49	2.75E-21	1.04E-21
851.01	2.77E-21	1.17E-21
850.53	2.98E-21	1.29E-21
850.05	3.23E-21	1.23E-21
849.56	3.45E-21	1.34E-21
849.08	3.45E-21	1.47E-21
848.60	3.39E-21	1.50E-21
848.12	3.45E-21	1.59E-21
847.64	3.67E-21	1.96E-21
847.15	3.65E-21	2.15E-21
846.67	3.35E-21	1.87E-21
846.19	3.37E-21	1.75E-21
845.71	3.80E-21	1.98E-21
845.22	3.90E-21	1.78E-21
844.74	3.75E-21	1.36E-21
844.26	3.55E-21	1.13E-21
843.78	3.40E-21	1.26E-21
843.30	3.26E-21	1.42E-21
842.81	3.10E-21	1.51E-21
842.33	3.12E-21	1.40E-21
841.85	3.25E-21	1.25E-21
841.37	3.00E-21	1.50E-21
840.89	2.95E-21	1.89E-21
840.40	3.74E-21	1.74E-21
839.92	4.46E-21	2.40E-21
839.44	4.31E-21	1.55E-21
838.96	3.84E-21	1.14E-21
838.47	3.77E-21	1.71E-21
837.99	4.08E-21	2.06E-21

837.51	4.29E-21	2.49E-21
837.03	4.24E-21	2.02E-21
836.55	4.22E-21	1.50E-21
836.06	4.33E-21	1.57E-21
835.58	4.27E-21	1.79E-21
835.10	3.97E-21	1.92E-21
834.62	3.42E-21	2.43E-21
834.14	3.22E-21	2.81E-21
833.65	3.69E-21	2.27E-21
833.17	4.33E-21	1.78E-21
832.69	4.48E-21	1.48E-21
832.21	4.03E-21	9.43E-22
831.72	3.66E-21	9.24E-22
831.24	3.52E-21	8.74E-22
830.76	3.57E-21	8.95E-22
830.28	4.00E-21	1.39E-21
829.80	4.38E-21	1.60E-21
829.31	4.56E-21	1.66E-21
828.83	4.70E-21	1.84E-21
828.35	4.65E-21	1.64E-21
827.87	4.09E-21	1.07E-21
827.38	3.32E-21	1.54E-21
826.90	2.97E-21	1.99E-21
826.42	3.22E-21	1.63E-21
825.94	3.46E-21	1.50E-21
825.46	3.28E-21	1.86E-21
824.97	3.20E-21	1.64E-21
824.49	3.60E-21	8.39E-22
824.01	4.03E-21	1.15E-21
823.53	3.87E-21	1.20E-21
823.05	3.59E-21	2.09E-21
822.56	3.59E-21	2.31E-21
822.08	3.71E-21	1.86E-21
821.60	3.68E-21	1.66E-21
821.12	3.47E-21	1.50E-21
820.63	3.27E-21	1.20E-21
820.15	3.29E-21	9.10E-22
819.67	3.38E-21	1.36E-21
819.19	3.40E-21	1.67E-21
818.71	3.23E-21	1.36E-21
818.22	3.01E-21	8.46E-22
817.74	2.89E-21	1.08E-21
817.26	2.92E-21	1.35E-21
816.78	3.00E-21	1.20E-21
816.30	3.17E-21	7.96E-22
815.81	3.40E-21	1.53E-21
815.33	3.43E-21	1.51E-21
814.85	3.27E-21	8.52E-22
814.37	3.12E-21	1.55E-21
813.88	3.15E-21	1.48E-21
813.40	3.14E-21	1.15E-21
812.92	2.80E-21	1.33E-21
812.44	2.32E-21	2.20E-21
811.96	2.01E-21	2.99E-21
811.47	1.98E-21	3.60E-21
810.99	2.34E-21	3.40E-21
810.51	3.00E-21	2.10E-21
810.03	3.49E-21	1.50E-21
809.55	3.28E-21	1.32E-21
809.06	2.69E-21	9.40E-22
808.58	2.55E-21	1.07E-21
808.10	2.71E-21	1.53E-21

807.62	2.82E-21	1.51E-21
807.13	3.06E-21	1.21E-21
806.65	3.52E-21	1.12E-21
806.17	3.86E-21	1.29E-21
805.69	3.92E-21	1.44E-21
805.21	3.77E-21	1.51E-21
804.72	3.48E-21	1.45E-21
804.24	3.38E-21	1.42E-21
803.76	3.14E-21	1.31E-21
803.28	2.56E-21	1.09E-21
802.79	2.00E-21	1.82E-21
802.31	2.15E-21	2.12E-21
801.83	2.87E-21	1.66E-21
801.35	3.52E-21	1.47E-21
800.87	3.76E-21	1.32E-21
800.38	3.65E-21	1.07E-21
799.90	3.49E-21	1.20E-21
799.42	3.69E-21	1.40E-21
798.94	3.79E-21	1.47E-21
798.46	3.34E-21	1.37E-21
797.97	2.75E-21	1.29E-21
797.49	2.24E-21	2.17E-21
797.01	2.08E-21	3.05E-21
796.53	2.52E-21	3.09E-21
796.04	3.25E-21	2.23E-21
795.56	3.73E-21	1.38E-21
795.08	3.48E-21	1.09E-21
794.60	2.92E-21	1.87E-21
794.12	2.58E-21	2.09E-21
793.63	2.68E-21	1.67E-21
793.15	2.88E-21	1.76E-21
792.67	2.93E-21	2.19E-21
792.19	3.10E-21	2.00E-21
791.71	3.19E-21	1.70E-21
791.22	3.19E-21	1.39E-21
790.74	3.61E-21	8.45E-22
790.26	3.85E-21	7.89E-22
789.78	3.52E-21	8.41E-22
789.29	3.31E-21	1.17E-21
788.81	3.55E-21	1.47E-21
788.33	3.47E-21	1.77E-21
787.85	2.91E-21	2.05E-21
787.37	2.69E-21	1.55E-21
786.88	2.93E-21	9.53E-22
786.40	3.39E-21	7.98E-22
785.92	3.73E-21	9.58E-22
785.44	3.61E-21	1.07E-21
784.95	2.93E-21	1.60E-21
784.47	2.41E-21	1.91E-21
783.99	2.63E-21	1.46E-21
783.51	3.11E-21	1.26E-21
783.03	3.26E-21	1.61E-21
782.54	3.02E-21	2.05E-21
782.06	2.95E-21	2.34E-21
781.58	3.22E-21	2.25E-21
781.10	3.36E-21	1.95E-21
780.62	3.47E-21	1.45E-21
780.13	3.57E-21	1.10E-21
779.65	3.53E-21	1.00E-21
779.17	3.65E-21	1.04E-21
778.69	4.12E-21	1.32E-21
778.20	4.44E-21	1.54E-21

777.72	4.25E-21	9.95E-22
777.24	3.92E-21	9.05E-22
776.76	3.83E-21	1.62E-21
776.28	4.25E-21	1.57E-21
775.79	4.91E-21	1.25E-21
775.31	5.56E-21	1.34E-21
774.83	6.48E-21	1.77E-21
774.35	7.18E-21	2.17E-21
773.87	7.48E-21	2.00E-21
773.38	8.40E-21	1.89E-21
772.90	9.78E-21	1.77E-21
772.42	1.10E-20	1.53E-21
771.94	1.22E-20	1.44E-21
771.45	1.40E-20	1.61E-21
770.97	1.67E-20	1.54E-21
770.49	2.01E-20	1.05E-21
770.01	2.37E-20	9.91E-22
769.53	2.78E-20	1.35E-21
769.04	3.33E-20	1.29E-21
768.56	4.04E-20	1.02E-21
768.08	4.80E-20	7.84E-22
767.60	5.58E-20	1.73E-21
767.12	6.42E-20	2.28E-21
766.63	7.32E-20	1.22E-21
766.15	8.14E-20	6.12E-22
765.67	8.80E-20	7.26E-22
765.19	9.25E-20	1.27E-21
764.70	9.50E-20	2.06E-21
764.22	9.59E-20	1.57E-21
763.74	9.52E-20	1.47E-21
763.26	9.27E-20	2.63E-21
762.78	8.99E-20	2.22E-21
762.29	8.99E-20	1.02E-21
761.81	9.73E-20	1.18E-21
761.33	1.13E-19	1.73E-21
760.85	1.30E-19	2.18E-21
760.36	1.36E-19	1.98E-21
759.88	1.28E-19	1.37E-21
759.40	1.15E-19	1.33E-21
758.92	1.05E-19	2.21E-21
758.44	9.94E-20	2.07E-21
757.95	9.72E-20	1.31E-21
757.47	9.75E-20	1.36E-21
756.99	9.86E-20	1.69E-21
756.51	9.88E-20	1.05E-21
756.03	9.77E-20	7.81E-22
755.54	9.56E-20	6.02E-22
755.06	9.24E-20	9.99E-22
754.58	8.73E-20	1.09E-21
754.10	8.09E-20	1.04E-21
753.61	7.44E-20	1.40E-21
753.13	6.84E-20	1.50E-21
752.65	6.26E-20	1.65E-21
752.17	5.69E-20	2.04E-21
751.69	5.17E-20	2.25E-21
751.20	4.79E-20	1.36E-21
750.72	4.54E-20	1.26E-21
750.24	4.31E-20	1.50E-21
749.76	4.06E-20	1.34E-21
749.28	3.84E-20	2.16E-21
748.79	3.73E-20	2.11E-21
748.31	3.77E-20	1.01E-21

747.83	3.89E-20	1.02E-21
747.35	4.05E-20	1.35E-21
746.86	4.24E-20	1.01E-21
746.38	4.52E-20	9.69E-22
745.90	4.97E-20	1.77E-21
745.42	5.59E-20	1.93E-21
744.94	6.37E-20	2.17E-21
744.45	7.38E-20	2.08E-21
743.97	8.63E-20	1.18E-21
743.49	1.01E-19	1.42E-21
743.01	1.18E-19	2.53E-21
742.52	1.36E-19	2.69E-21
742.04	1.54E-19	2.37E-21
741.56	1.72E-19	2.53E-21
741.08	1.89E-19	3.15E-21
740.60	2.04E-19	3.49E-21
740.11	2.15E-19	3.30E-21
739.63	2.21E-19	3.34E-21
739.15	2.23E-19	3.05E-21
738.67	2.21E-19	3.00E-21
738.19	2.18E-19	3.24E-21
737.70	2.18E-19	3.78E-21
737.22	2.31E-19	4.34E-21
736.74	2.58E-19	4.79E-21
736.26	2.90E-19	5.18E-21
735.77	3.12E-19	5.19E-21
735.29	3.15E-19	4.68E-21
734.81	3.06E-19	4.22E-21
734.33	2.94E-19	3.81E-21
733.85	2.86E-19	3.61E-21
733.36	2.86E-19	3.97E-21
732.88	2.91E-19	4.66E-21
732.40	3.00E-19	4.77E-21
731.92	3.09E-19	5.04E-21
731.44	3.15E-19	5.69E-21
730.95	3.16E-19	5.55E-21
730.47	3.11E-19	4.58E-21
729.99	3.01E-19	3.67E-21
729.51	2.88E-19	3.25E-21
729.02	2.71E-19	3.22E-21
728.54	2.56E-19	3.60E-21
728.06	2.45E-19	4.29E-21
727.58	2.39E-19	3.63E-21
727.10	2.37E-19	2.51E-21
726.61	2.33E-19	2.47E-21
726.13	2.24E-19	2.60E-21
725.65	2.10E-19	2.31E-21
725.17	1.94E-19	1.61E-21
724.69	1.79E-19	1.39E-21
724.20	1.67E-19	1.26E-21
723.72	1.58E-19	1.20E-21
723.24	1.51E-19	1.18E-21
722.76	1.47E-19	2.76E-21
722.27	1.43E-19	3.83E-21
721.79	1.38E-19	3.50E-21
721.31	1.33E-19	2.90E-21
720.83	1.27E-19	2.15E-21
720.35	1.20E-19	1.44E-21
719.86	1.12E-19	1.05E-21
719.38	1.04E-19	1.08E-21
718.90	9.56E-20	1.27E-21
718.42	8.68E-20	1.81E-21

717.93	7.77E-20	2.55E-21
717.45	6.92E-20	2.68E-21
716.97	6.15E-20	2.21E-21
716.49	5.48E-20	1.62E-21
716.01	4.90E-20	1.61E-21
715.52	4.35E-20	1.72E-21
715.04	3.81E-20	1.36E-21
714.56	3.33E-20	1.17E-21
714.08	2.94E-20	1.33E-21
713.60	2.65E-20	1.20E-21
713.11	2.42E-20	1.13E-21
712.63	2.23E-20	1.37E-21
712.15	1.97E-20	9.88E-22
711.67	1.72E-20	2.10E-21
711.18	1.57E-20	2.27E-21
710.70	1.48E-20	2.05E-21
710.22	1.40E-20	1.80E-21
709.74	1.34E-20	1.62E-21
709.26	1.23E-20	1.87E-21
708.77	1.10E-20	2.86E-21
708.29	1.00E-20	3.99E-21
707.81	9.64E-21	4.10E-21
707.33	9.76E-21	2.45E-21
706.85	9.90E-21	1.14E-21
706.36	9.93E-21	8.83E-22
705.88	9.41E-21	7.37E-22
705.40	8.17E-21	2.07E-21
704.92	7.14E-21	3.18E-21
704.43	6.89E-21	2.78E-21
703.95	6.91E-21	2.08E-21
703.47	6.98E-21	1.58E-21
702.99	7.23E-21	1.35E-21
702.51	7.17E-21	1.72E-21
702.02	6.94E-21	2.26E-21
701.54	7.20E-21	1.80E-21
701.06	7.50E-21	1.41E-21
700.58	7.41E-21	1.85E-21
700.09	7.49E-21	2.39E-21
699.61	7.81E-21	2.13E-21
699.13	7.57E-21	1.73E-21
698.65	6.84E-21	1.57E-21
698.17	6.23E-21	2.26E-21
697.68	5.88E-21	2.86E-21
697.20	5.92E-21	2.82E-21
696.72	6.47E-21	2.29E-21
696.24	7.40E-21	1.63E-21
695.76	8.14E-21	2.24E-21
695.27	8.01E-21	2.23E-21
694.79	7.45E-21	1.77E-21
694.31	7.07E-21	2.18E-21
693.83	7.10E-21	2.53E-21
693.34	7.66E-21	1.64E-21
692.86	8.11E-21	7.67E-22
692.38	7.90E-21	7.87E-22
691.90	7.83E-21	9.79E-22
691.42	8.01E-21	1.03E-21
690.93	8.10E-21	1.06E-21
690.45	8.13E-21	1.30E-21
689.97	8.51E-21	1.94E-21
689.49	8.96E-21	2.41E-21
689.01	9.21E-21	2.45E-21
688.52	9.34E-21	2.04E-21

688.04	9.52E-21	2.24E-21
687.56	1.00E-20	2.15E-21
687.08	1.09E-20	1.88E-21
686.59	1.14E-20	1.78E-21
686.11	1.14E-20	1.17E-21
685.63	1.14E-20	1.70E-21
685.15	1.17E-20	2.52E-21
684.67	1.20E-20	2.77E-21
684.18	1.31E-20	2.04E-21
683.70	1.53E-20	2.65E-21
683.22	1.63E-20	2.70E-21
682.74	1.52E-20	1.69E-21
682.26	1.41E-20	3.10E-21
681.77	1.45E-20	2.93E-21
681.29	1.55E-20	1.80E-21
680.81	1.65E-20	1.40E-21
680.33	1.73E-20	1.26E-21
679.84	1.70E-20	2.00E-21
679.36	1.62E-20	3.73E-21
678.88	1.62E-20	4.23E-21
678.40	1.66E-20	3.88E-21
677.92	1.65E-20	3.53E-21
677.43	1.63E-20	2.72E-21
676.95	1.67E-20	1.69E-21
676.47	1.67E-20	1.99E-21
675.99	1.62E-20	2.83E-21
675.50	1.58E-20	3.31E-21
675.02	1.52E-20	3.86E-21
674.54	1.42E-20	5.02E-21
674.06	1.40E-20	5.23E-21
673.58	1.46E-20	4.04E-21
673.09	1.51E-20	3.01E-21
672.61	1.56E-20	2.53E-21
672.13	1.63E-20	2.20E-21
671.65	1.62E-20	2.31E-21
671.17	1.53E-20	1.65E-21
670.68	1.51E-20	2.25E-21
670.20	1.57E-20	4.85E-21
669.72	1.58E-20	6.82E-21
669.24	1.56E-20	8.61E-21
668.75	1.46E-20	1.04E-20
668.27	1.09E-20	1.32E-20
667.79	7.54E-21	1.30E-20
667.31	1.19E-20	6.72E-21
666.83	1.54E-20	3.01E-21
666.34	1.78E-20	1.85E-21
665.86	1.92E-20	1.85E-21
665.38	1.99E-20	2.38E-21
664.90	2.12E-20	2.81E-21
664.42	2.27E-20	1.85E-21
663.93	2.35E-20	1.59E-21
663.45	2.37E-20	2.23E-21
662.97	2.38E-20	2.67E-21
662.49	2.42E-20	2.89E-21
662.00	2.50E-20	3.15E-21
661.52	2.62E-20	2.95E-21
661.04	2.76E-20	2.36E-21
660.56	2.87E-20	1.61E-21
660.08	2.89E-20	2.10E-21
659.59	2.96E-20	4.04E-21
659.11	3.24E-20	4.17E-21
658.63	3.51E-20	3.67E-21

658.15	3.52E-20	3.84E-21
657.66	3.35E-20	3.61E-21
657.18	3.20E-20	3.11E-21
656.70	3.15E-20	2.94E-21
656.22	3.19E-20	2.14E-21
655.74	3.18E-20	2.38E-21
655.25	3.01E-20	2.98E-21
654.77	2.91E-20	3.42E-21
654.29	2.94E-20	2.87E-21
653.81	2.94E-20	2.11E-21
653.33	2.83E-20	2.33E-21
652.84	2.69E-20	3.15E-21
652.36	2.54E-20	5.80E-21
651.88	2.45E-20	1.10E-20
651.40	2.51E-20	1.17E-20
650.91	2.45E-20	7.50E-21
650.43	2.08E-20	4.37E-21
649.95	1.73E-20	4.08E-21
649.47	1.55E-20	2.13E-21
648.99	1.48E-20	1.56E-21
648.50	1.55E-20	2.15E-21
648.02	1.62E-20	2.98E-21
647.54	1.55E-20	3.14E-21
647.06	1.38E-20	2.19E-21
646.58	1.22E-20	1.95E-21
646.09	1.12E-20	4.04E-21
645.61	1.05E-20	5.57E-21
645.13	1.08E-20	4.60E-21
644.65	8.98E-21	6.73E-21
644.16	4.05E-21	1.57E-20
643.68	2.41E-21	1.85E-20
643.20	5.55E-21	1.16E-20
642.72	7.95E-21	5.55E-21
642.24	8.03E-21	4.51E-21
641.75	7.74E-21	5.67E-21
641.27	7.85E-21	5.70E-21
640.79	8.16E-21	3.83E-21
640.31	8.16E-21	3.41E-21
639.83	7.30E-21	4.32E-21
639.34	6.73E-21	5.64E-21
638.86	8.13E-21	4.60E-21
638.38	1.01E-20	2.01E-21
637.90	1.05E-20	1.43E-21
637.41	9.98E-21	1.09E-21
636.93	1.01E-20	2.04E-21
636.45	1.13E-20	2.36E-21
635.97	1.31E-20	4.74E-21
635.49	1.40E-20	5.47E-21
635.00	1.37E-20	3.95E-21
634.52	1.26E-20	3.50E-21
634.04	1.18E-20	5.12E-21
633.56	1.10E-20	6.17E-21
633.07	9.21E-21	7.93E-21
632.59	1.00E-20	7.92E-21
632.11	1.42E-20	5.50E-21
631.63	1.68E-20	2.65E-21
631.15	1.59E-20	1.57E-21
630.66	1.32E-20	5.46E-21
630.18	1.13E-20	1.01E-20
629.70	1.12E-20	1.06E-20
629.22	1.15E-20	1.00E-20
628.74	1.28E-20	1.02E-20

628.25	1.62E-20	8.05E-21
627.77	1.98E-20	4.43E-21
627.29	2.16E-20	3.28E-21
626.81	2.18E-20	4.79E-21
626.32	2.18E-20	5.17E-21
625.84	2.25E-20	3.54E-21
625.36	2.32E-20	3.64E-21
624.88	2.43E-20	4.56E-21
624.40	2.61E-20	3.60E-21
623.91	2.75E-20	1.52E-21
623.43	2.81E-20	9.11E-22
622.95	2.84E-20	1.77E-21
622.47	2.84E-20	3.67E-21
621.99	2.72E-20	5.57E-21
621.50	2.54E-20	1.06E-20
621.02	2.56E-20	1.38E-20
620.54	2.84E-20	1.11E-20
620.06	3.21E-20	4.80E-21
619.57	3.47E-20	5.30E-21
619.09	3.47E-20	7.12E-21
618.61	3.22E-20	3.27E-21
618.13	3.09E-20	5.18E-21
617.65	3.26E-20	4.61E-21
617.16	3.34E-20	4.37E-21
616.68	3.14E-20	4.97E-21
616.20	2.89E-20	7.55E-21
615.72	2.78E-20	9.41E-21
615.23	2.91E-20	6.46E-21
614.75	3.10E-20	2.55E-21
614.27	3.08E-20	2.19E-21
613.79	2.84E-20	1.82E-21
613.31	2.64E-20	2.80E-21
612.82	2.52E-20	3.85E-21
612.34	2.33E-20	6.06E-21
611.86	2.12E-20	6.55E-21
611.38	2.00E-20	5.76E-21
610.90	1.87E-20	6.65E-21
610.41	1.70E-20	7.66E-21
609.93	1.54E-20	7.11E-21
609.45	1.44E-20	8.33E-21
608.97	1.56E-20	1.08E-20
608.48	1.90E-20	9.91E-21
608.00	2.05E-20	6.14E-21
607.52	1.85E-20	3.94E-21
607.04	1.63E-20	4.25E-21
606.56	1.55E-20	4.48E-21
606.07	1.48E-20	5.46E-21
605.59	1.40E-20	6.93E-21
605.11	1.36E-20	7.80E-21
604.63	1.44E-20	7.36E-21
604.15	1.62E-20	6.07E-21
603.66	1.75E-20	5.37E-21
603.18	1.81E-20	3.59E-21
602.70	1.86E-20	2.66E-21
602.22	1.86E-20	2.66E-21
601.73	1.73E-20	3.45E-21
601.25	1.56E-20	7.65E-21
600.77	1.43E-20	9.76E-21
600.29	1.43E-20	9.30E-21
599.81	1.62E-20	7.95E-21
599.32	2.00E-20	6.47E-21
598.84	2.47E-20	4.47E-21

598.36	2.74E-20	5.69E-21
597.88	2.59E-20	4.50E-21
597.40	2.29E-20	4.89E-21
596.91	2.21E-20	4.31E-21
596.43	2.32E-20	4.17E-21
595.95	2.50E-20	5.52E-21
595.47	2.56E-20	5.40E-21
594.98	2.42E-20	4.48E-21
594.50	2.31E-20	3.96E-21
594.02	2.38E-20	3.44E-21
593.54	2.45E-20	3.30E-21
593.06	2.33E-20	5.38E-21
592.57	2.14E-20	7.44E-21
592.09	2.12E-20	6.56E-21
591.61	2.18E-20	6.47E-21
591.13	2.03E-20	8.81E-21
590.64	1.88E-20	1.07E-20
590.16	1.97E-20	8.96E-21
589.68	2.20E-20	5.76E-21
589.20	2.31E-20	5.33E-21
588.72	2.23E-20	5.27E-21
588.23	2.11E-20	6.01E-21
587.75	1.94E-20	5.24E-21
587.27	1.55E-20	8.32E-21
586.79	1.22E-20	1.48E-20
586.31	1.20E-20	1.42E-20
585.82	1.28E-20	1.05E-20
585.34	1.23E-20	8.86E-21
584.86	1.21E-20	6.47E-21
584.38	1.31E-20	4.37E-21
583.89	1.30E-20	5.52E-21
583.41	1.14E-20	5.80E-21
582.93	9.50E-21	5.46E-21
582.45	8.21E-21	3.23E-21
581.97	7.13E-21	4.43E-21
581.48	4.57E-21	6.48E-21
581.00	1.66E-22	1.53E-20
580.52	-2.15E-21	2.03E-20
580.04	7.54E-22	1.68E-20
579.56	5.07E-21	1.06E-20
579.07	7.58E-21	6.43E-21
578.59	9.07E-21	4.87E-21
578.11	1.04E-20	4.98E-21
577.63	1.10E-20	5.11E-21
577.14	1.06E-20	6.19E-21
576.66	8.11E-21	7.98E-21
576.18	4.54E-21	1.00E-20
575.70	4.07E-21	8.34E-21
575.22	5.94E-21	6.31E-21
574.73	6.41E-21	6.78E-21
574.25	5.56E-21	8.82E-21
573.77	5.09E-21	9.99E-21
573.29	1.04E-20	1.55E-20
572.80	2.17E-20	2.81E-20
572.32	2.29E-20	2.34E-20
571.84	9.09E-21	1.21E-20
571.36	-2.26E-21	2.48E-20
570.88	-4.09E-21	2.37E-20
570.39	-2.13E-21	1.81E-20
569.91	2.17E-21	1.18E-20
569.43	6.59E-21	7.54E-21
568.95	9.40E-21	7.25E-21

568.47	1.13E-20	6.41E-21
567.98	1.01E-20	2.96E-21
567.50	5.48E-21	9.93E-21
567.02	2.12E-21	1.46E-20
566.54	1.87E-21	1.64E-20
566.05	3.80E-21	1.48E-20
565.57	7.06E-21	9.99E-21
565.09	9.98E-21	8.11E-21
564.61	1.09E-20	7.68E-21
564.13	1.12E-20	8.85E-21
563.64	1.30E-20	8.04E-21
563.16	1.41E-20	7.40E-21
562.68	1.22E-20	8.60E-21
562.20	1.05E-20	1.40E-20
561.72	1.17E-20	1.46E-20
561.23	1.51E-20	8.06E-21
560.75	1.76E-20	4.60E-21
560.27	1.79E-20	3.98E-21
559.79	1.77E-20	4.13E-21
559.30	1.71E-20	6.63E-21
558.82	1.56E-20	1.16E-20
558.34	1.59E-20	1.41E-20
557.86	1.97E-20	7.96E-21
557.38	2.41E-20	6.37E-21
556.89	2.52E-20	6.86E-21
556.41	2.37E-20	5.88E-21
555.93	2.36E-20	8.28E-21
555.45	2.52E-20	8.71E-21
554.97	2.81E-20	8.62E-21
554.48	3.27E-20	1.35E-20
554.00	3.23E-20	1.34E-20
553.52	2.19E-20	1.63E-20
553.04	1.29E-20	3.15E-20
552.55	1.57E-20	2.53E-20
552.07	2.25E-20	1.66E-20
551.59	2.58E-20	1.53E-20
551.11	2.82E-20	1.20E-20
550.63	3.08E-20	8.68E-21
550.14	3.25E-20	7.39E-21
549.66	3.02E-20	6.28E-21
549.18	2.46E-20	1.09E-20
548.70	2.28E-20	1.32E-20
548.21	2.51E-20	1.12E-20
547.73	2.66E-20	9.87E-21
547.25	2.54E-20	1.01E-20
546.77	2.22E-20	8.80E-21
546.29	1.89E-20	1.55E-20
545.80	1.73E-20	2.22E-20
545.32	1.81E-20	2.01E-20
544.84	2.09E-20	1.08E-20
544.36	2.26E-20	6.05E-21
543.88	2.11E-20	7.97E-21
543.39	1.84E-20	1.42E-20
542.91	1.67E-20	1.55E-20
542.43	1.52E-20	1.56E-20
541.95	1.34E-20	1.50E-20
541.46	1.14E-20	1.63E-20
540.98	7.90E-21	1.90E-20
540.50	6.22E-21	1.80E-20
540.02	1.23E-20	1.05E-20
539.54	2.16E-20	1.29E-20
539.05	2.43E-20	1.38E-20

538.57	2.08E-20	1.33E-20
538.09	1.67E-20	1.61E-20
537.61	1.35E-20	2.23E-20
537.13	1.15E-20	3.02E-20
536.64	1.17E-20	3.10E-20
536.16	1.34E-20	2.41E-20
535.68	1.65E-20	1.73E-20
535.20	2.05E-20	1.54E-20
534.71	2.20E-20	1.52E-20
534.23	2.05E-20	1.40E-20
533.75	1.86E-20	1.35E-20
533.27	1.90E-20	1.40E-20
532.79	2.11E-20	1.73E-20
532.30	2.04E-20	2.95E-20
531.82	1.84E-20	4.00E-20
531.34	2.25E-20	3.41E-20
530.86	3.06E-20	2.22E-20
530.37	3.43E-20	2.04E-20
529.89	3.56E-20	2.14E-20
529.41	3.79E-20	2.01E-20
528.93	3.73E-20	1.58E-20
528.45	3.55E-20	1.05E-20
527.96	3.47E-20	1.34E-20
527.48	2.99E-20	1.44E-20
527.00	2.25E-20	2.52E-20
526.52	1.85E-20	3.42E-20
526.04	1.87E-20	3.18E-20
525.55	2.24E-20	2.23E-20
525.07	2.52E-20	1.81E-20
524.59	2.25E-20	2.09E-20
524.11	1.70E-20	2.25E-20
523.62	1.21E-20	2.70E-20
523.14	8.77E-21	3.27E-20
522.66	1.18E-20	2.81E-20
522.18	1.92E-20	2.09E-20
521.70	1.93E-20	1.83E-20
521.21	1.01E-20	1.52E-20
520.73	4.71E-21	2.04E-20
520.25	9.51E-21	2.05E-20
519.77	1.46E-20	3.01E-20
519.29	4.66E-21	3.81E-20
518.80	-1.59E-20	5.28E-20
518.32	-3.19E-20	7.63E-20
517.84	-3.51E-20	7.80E-20
517.36	-1.90E-20	5.04E-20
516.87	1.83E-21	3.51E-20
516.39	5.29E-21	4.09E-20
515.91	2.54E-21	4.04E-20
515.43	3.92E-21	3.10E-20
514.95	1.66E-21	2.65E-20
514.46	-2.91E-21	4.92E-20
513.98	-3.83E-21	6.60E-20
513.50	-8.10E-21	7.43E-20
513.02	-1.81E-20	7.71E-20
512.54	-2.16E-20	8.58E-20
512.05	-1.41E-20	8.73E-20
511.57	-2.96E-21	7.41E-20
511.09	5.58E-21	6.64E-20
510.61	1.29E-20	6.09E-20
510.12	2.30E-20	4.78E-20
509.64	2.68E-20	4.32E-20
509.16	2.04E-20	5.01E-20

508.68	1.97E-20	6.13E-20
508.20	3.78E-20	5.15E-20
507.71	6.41E-20	3.14E-20
507.23	8.19E-20	3.99E-20
506.75	7.93E-20	5.93E-20
506.27	5.66E-20	7.15E-20
505.78	2.98E-20	6.93E-20
505.30	1.41E-20	5.76E-20
504.82	2.59E-20	5.07E-20
504.34	5.84E-20	7.99E-20
503.86	7.73E-20	1.58E-19
503.37	7.45E-20	1.97E-19
502.89	6.17E-20	2.00E-19
502.41	2.42E-20	1.68E-19
501.93	-3.31E-20	1.51E-19
501.45	-4.45E-20	1.78E-19
500.96	-7.82E-21	1.58E-19
500.48	2.12E-20	1.73E-19
500.00	1.99E-20	1.64E-19

Negative values must be considered as zero

TABLE S3. Summary of the Measured Absolute Rate Coefficients^a $k_{\text{OH}}(T)$ as a Function of Temperature and Total Pressure

T (K)	p _{T,cell} (Torr)	[HFC-1447fz]×10 ⁻¹⁴ (molecule cm ⁻³)	Range of k' (s ⁻¹)	$k_{\text{OH}}(T) \times 10^{12}$ (cm ³ molecule ⁻¹ s ⁻¹)
263	50	1.7 – 9.8	201 – 1370	1.42 ± 0.04
	70	1.5 – 10.7	196 – 1457	1.36 ± 0.02
	140	3.0 – 11.6	352 – 1510	1.30 ± 0.04
				1.36 ± 0.12
270	50	1.4 – 9.0	199 – 1261	1.40 ± 0.03
	70	2.5 – 9.9	338 – 1334	1.34 ± 0.02
	140	2.3 – 10.8	277 – 1366	1.27 ± 0.04
				1.34 ± 0.14
278	50	2.8 – 9.9	337 – 1355	1.39 ± 0.03
	70	2.4 – 10.7	301 – 1408	1.32 ± 0.02
	140	2.2 – 10.5	263 – 1321	1.26 ± 0.03
				1.32 ± 0.14
287	50	1.5 – 9.2	180 – 1235	1.35 ± 0.02
	70	2.2 – 10.0	284 – 1300	1.29 ± 0.02
	140	2.4 – 11.4	279 – 1382	1.23 ± 0.03
				1.29 ± 0.12
298	50	2.7 – 10.3	395 – 1384	1.32 ± 0.05
	70	2.2 – 10.0	274 – 1240	1.26 ± 0.04
	140	2.3 – 10.9	270 – 1302	1.21 ± 0.03

	650	$3.6 - 15.7$	$400 - 1823$	1.16 ± 0.03
				1.24 ± 0.14
308	50	$2.8 - 10.0$	$363 - 1285$	1.29 ± 0.03
	70	$2.1 - 9.6$	$247 - 1181$	1.24 ± 0.03
	140	$2.6 - 12.0$	$273 - 1407$	1.18 ± 0.04
				1.24 ± 0.12
323	50	$2.6 - 9.9$	$345 - 1264$	1.27 ± 0.03
	70	$2.1 - 9.6$	$266 - 1144$	1.20 ± 0.04
	140	$2.1 - 10.2$	$241 - 1161$	1.15 ± 0.02
				1.21 ± 0.12
338	50	$2.7 - 10.6$	$349 - 1302$	1.23 ± 0.04
	70	$2.2 - 9.4$	$227 - 1095$	1.19 ± 0.05
	140	$2.3 - 10.9$	$264 - 1249$	1.14 ± 0.01
				1.19 ± 0.10
358	50	$2.6 - 10.0$	$305 - 1217$	1.21 ± 0.02
	70	$2.1 - 9.4$	$218 - 1078$	1.16 ± 0.03
	140	$2.2 - 10.4$	$235 - 1158$	1.11 ± 0.02
				1.16 ± 0.10

^a Uncertainties are $\pm 2\sigma$ of the precision of the fit. Data in bold italics are the non-weighted average of k_{OH} at the temperature T .

TABLE S4. Comparison of the room temperature k_{OH} and the Arrhenius parameters for the OH-reactions with some fluorinated alkenes, $\text{CF}_3(\text{CF}_2)_{x=0-5}\text{CH}=\text{CH}_2$

HFC	$k_{\text{OH}}(298 \text{ K}) \times 10^{12}$ ($\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$)	T Range (K)	$A \times 10^{13}$ ($\text{cm}^3 \text{ molecule}^{-1} \text{ s}^{-1}$)	E_a/R (K)	Reference
$\text{CF}_3\text{CH}=\text{CH}_2$	1.31 ± 0.14	263-358	7.65 ± 0.26	-165 ± 10	González et al. ¹⁵
	1.52 ± 0.02	252-370	8.28	-183 ± 26	Orkin et al. ⁶
$\text{CF}_3\text{CF}_2\text{CH}=\text{CH}_2$	1.21 ± 0.04	-	-	-	Jiménez et al. ¹¹
	1.36 ± 0.25	-	-	-	Sulbaek Andersen et al. ¹⁶
$\text{CF}_3(\text{CF}_2)_2\text{CH}=\text{CH}_2$	1.21 ± 0.07	263-358	7.4 ± 0.4	-161 ± 16	This work
$\text{CF}_3(\text{CF}_2)_3\text{CH}=\text{CH}_2$	1.3 ± 0.2	233-372	8.5 ± 1.4	-139 ± 48	Vésine et al. ¹⁷
$\text{CF}_3(\text{CF}_2)_4\text{CH}=\text{CH}_2$		-	-	-	
$\text{CF}_3(\text{CF}_2)_5\text{CH}=\text{CH}_2$	1.3 ± 0.5	253-372	13 ± 5	-31 ± 124	Vésine et al. ¹⁷

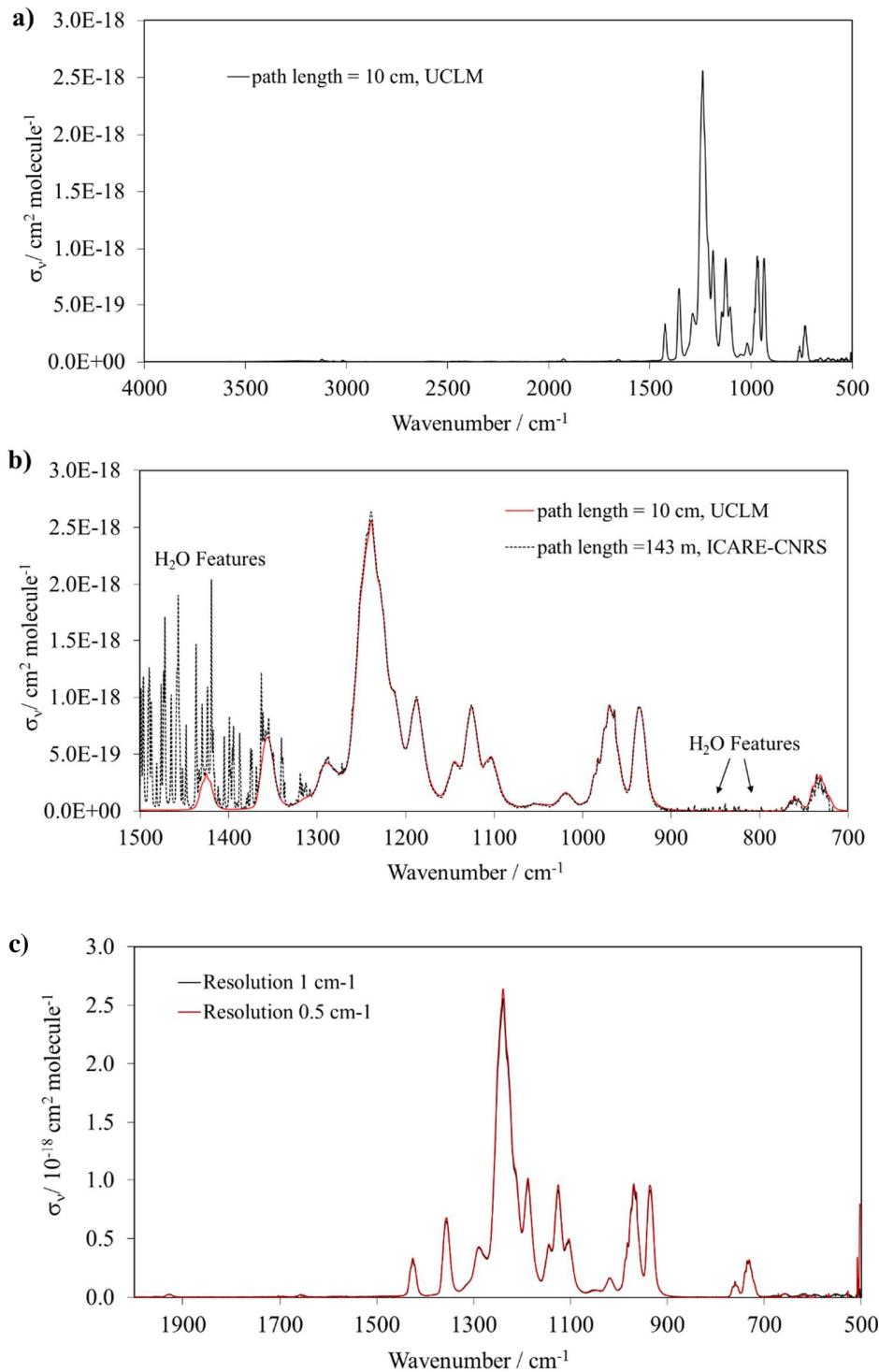


Figure S1. FTIR spectrum of HFC-1447fz recorded at **a)** UCLM between 4000 and 500 cm^{-1} ; **b)** UCLM and ICARE between 1500 and 700 cm^{-1} and **c)** UCLM with an instrumental resolution of 0.5 cm^{-1} and 1 cm^{-1} .

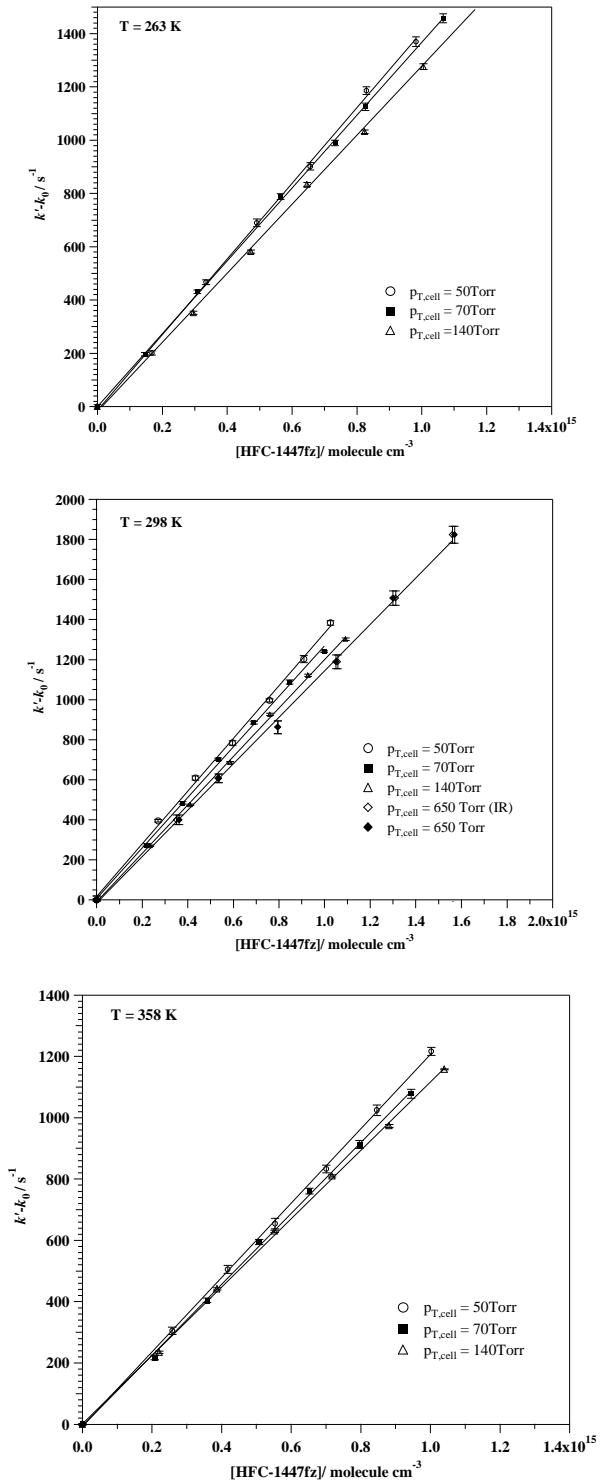


Figure S2. Pseudo-first order plots ($k' - k_0$ versus $[\text{HFC-1447fz}]$) obtained at 263 K, 298 K and 358 K for the OH-reaction with the HFC under investigation.

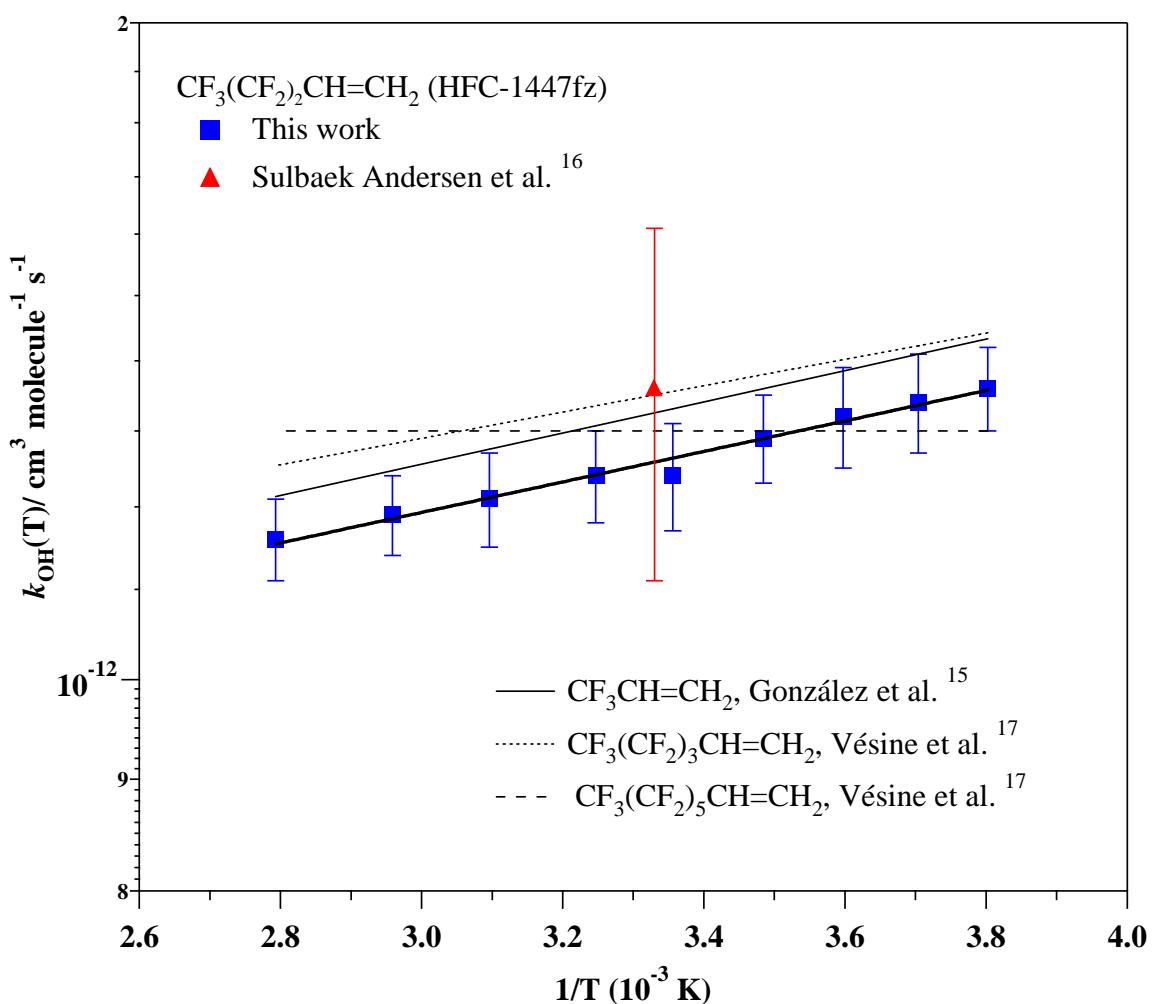


Figure S3. Arrhenius plot for reaction (R1) and literature temperature dependencies of k_{OH} for other HFOs in the series.

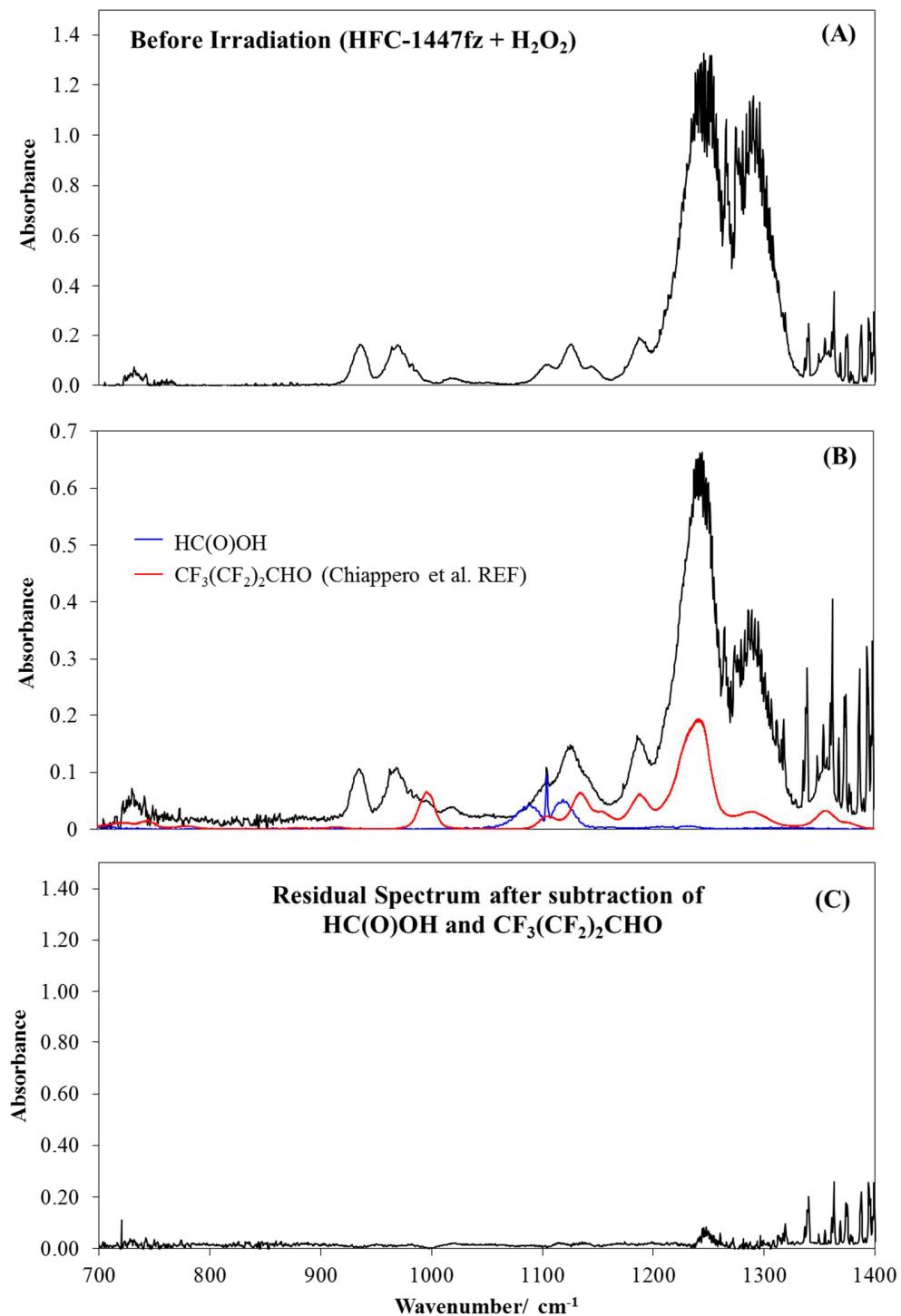


Figure S4. FTIR spectra recorded in the HFC-1447fz (1221 ppb)/H₂O₂ (31.7 ppm) system **a)** Initial spectrum before irradiation, **b)** final IR spectrum after irradiation, and **c)** after spectral subtraction of unreacted HFC-1447fz and identified products.

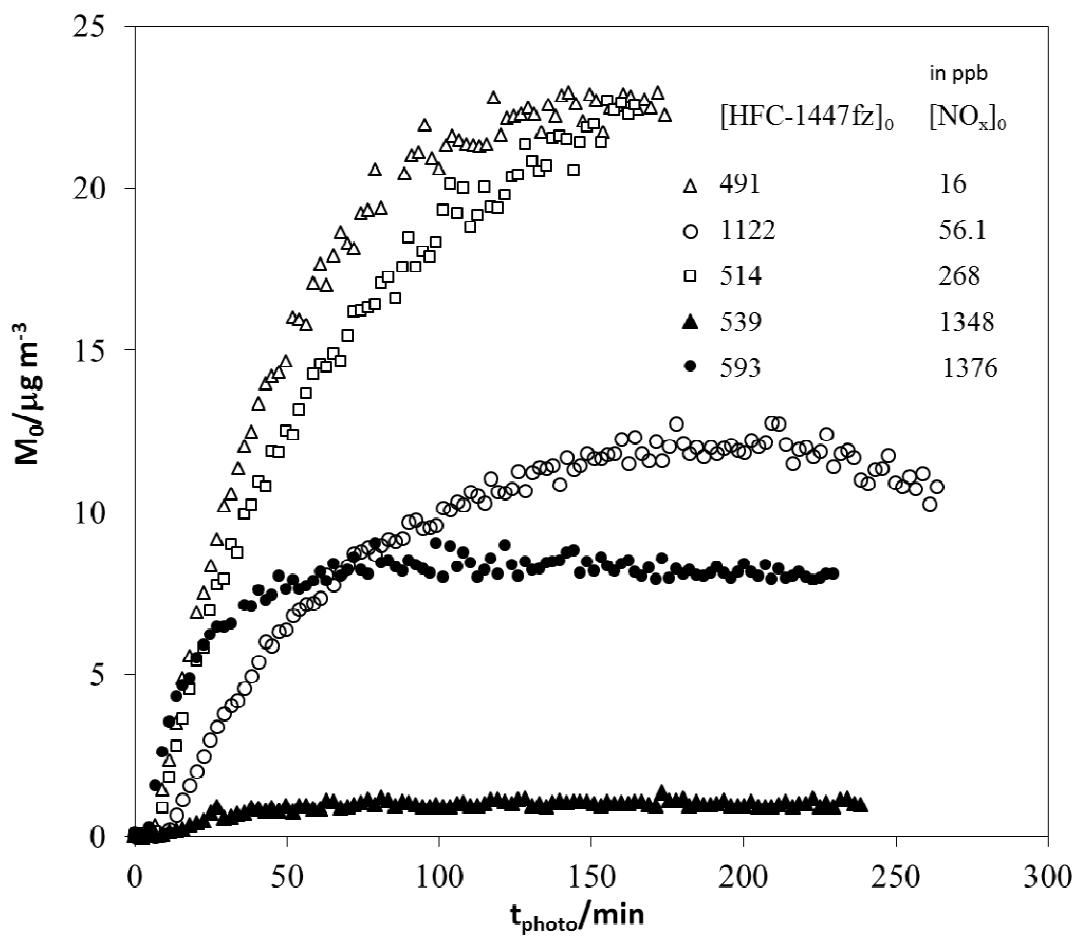


Figure S5. Time evolution of the particle mass concentration (M_0) in the HFC-1447fz/H₂O₂/air system (open symbols) and HFC-1447fz/CH₃ONO/NO/air (full symbols) system