

# ADDITIONS AND CORRECTIONS

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**Timothy I. Morrow and Edward J. Maginn\***: Molecular Dynamics Study of the Ionic Liquid 1-n-Butyl-3-methylimidazolium Hexafluorophosphate

Page 12807. Equation 1 reads

$$V_{\text{tot}} = \sum_{\text{bonds}} k_b (r - r_0)^2 + \sum_{\text{angles}} k_\theta (\theta - \theta_0)^2 + \sum_{\text{dihedrals}} k_\chi [1 + \cos(n\chi - \delta)] + \sum_{\text{improper}} k_\psi (\psi - \psi_0)^2 + \sum_{i=1}^{N-1} \sum_{j>i}^N \left\{ \epsilon_{ij} \left[ \left( \frac{r_{\text{min},ij}}{r_{ij}} \right)^{12} - \left( \frac{r_{\text{min},ij}}{r_{ij}} \right)^6 \right] + \frac{q_i q_j}{r_{ij}} \right\}$$

And should read

$$V_{\text{tot}} = \sum_{\text{bonds}} k_b (r - r_0)^2 + \sum_{\text{angles}} k_\theta (\theta - \theta_0)^2 + \sum_{\text{dihedrals}} k_\chi [1 + \cos(n\chi - \delta)] + \sum_{\text{improper}} k_\psi (\psi - \psi_0)^2 + \sum_{i=1}^{N-1} \sum_{j>i}^N \left\{ \epsilon_{ij} \left[ \left( \frac{r_{\text{min},ij}}{r_{ij}} \right)^{12} - 2 \left( \frac{r_{\text{min},ij}}{r_{ij}} \right)^6 \right] + \frac{q_i q_j}{r_{ij}} \right\}$$

(that is, there is a factor of 2 missing in front of the attractive dispersion term).

Page 12808. The units of Table 2 were incorrectly listed, and several entries were missing. The following is a corrected Table 2.

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**TABLE 2: Bond, Angle, Dihedral, and Improper Force Constants**

force bonds	force constant		force bonds	force constant	
	$k_b$ (kJ mol <sup>-1</sup> Å <sup>-2</sup> )	$r_0$ (Å)		$k_b$ (kJ mol <sup>-1</sup> Å <sup>-2</sup> )	$r_0$ (Å)
C <sub>6</sub> -N <sub>3</sub>	921.1	1.470	C <sub>7</sub> -H <sub>7,8</sub>		1.091
C <sub>7</sub> -N <sub>1</sub>	921.1	1.483	C <sub>8,9</sub> -H <sub>9,10,11,12</sub>		1.096
C <sub>5,4</sub> -N <sub>1,3</sub>	1674.7	1.382	C <sub>10</sub> -H <sub>13,14,15</sub>		1.093
C <sub>2</sub> -N <sub>1,3</sub>	1674.7	1.337	C <sub>7</sub> -C <sub>8</sub>	837.4	1.530
C <sub>4</sub> -C <sub>5</sub>	1716.6	1.361	C <sub>8</sub> -C <sub>9</sub>	931.6	1.534
C <sub>2</sub> -H <sub>1</sub>		1.078	C <sub>9</sub> -C <sub>10</sub>	931.6	1.530
C <sub>4,5</sub> -H <sub>2,3</sub>		1.078	P-F	1089.8	1.646
C <sub>6</sub> -H <sub>4,5,6</sub>		1.089			
angles		$\theta_0$ (deg)	angles		$\theta_0$ (deg)
C <sub>8</sub> -C <sub>7</sub> -N <sub>1</sub>	586.2	112.6	H <sub>7</sub> -C <sub>7</sub> -H <sub>8</sub>	148.6	107.2
C <sub>5,4</sub> -N <sub>1,3</sub> -C <sub>2</sub>	544.3	108.3	H <sub>7,8</sub> -C <sub>7</sub> -C <sub>8</sub>	139.8	111.5
C <sub>7</sub> -N <sub>1</sub> -C <sub>2,5</sub>	544.3	125.9	H <sub>9,10</sub> -C <sub>8</sub> -C <sub>7</sub>	139.8	109.5
C <sub>6</sub> -N <sub>3</sub> -C <sub>2,4</sub>	544.3	125.8	C <sub>7,8</sub> -C <sub>8,9</sub> -C <sub>9,10</sub>	244.5	111.6
H <sub>4,5,6</sub> -C <sub>6</sub> -N <sub>3</sub>	125.6	109.6	H-C <sub>8,9</sub> -H	144.4	106.4
H <sub>1</sub> -C <sub>2</sub> -N <sub>1,3</sub>	104.7	125.5	C <sub>8,9</sub> -C <sub>9,10</sub> -H	144.6	109.7
N <sub>1,3</sub> -C <sub>5,4</sub> -C <sub>4,5</sub>	544.3	107.2	H <sub>9,10</sub> -C <sub>8</sub> -C <sub>9</sub>	144.6	109.7
N <sub>1</sub> -C <sub>2</sub> -N <sub>3</sub>	544.3	109.1	H <sub>11,12</sub> -C <sub>9</sub> -C <sub>10</sub>	144.6	109.7
H <sub>2,3</sub> -C <sub>4,5</sub> -C <sub>5,4</sub>	104.7	130.8	H <sub>13,14,15</sub> -C <sub>10</sub> -H	148.6	107.6
H <sub>4,5,6</sub> -C <sub>6</sub> -H	148.6	109.3	N-C <sub>7</sub> -H <sub>8,9</sub>	125.6	106.8
N <sub>1,3</sub> -C <sub>5,4</sub> -H <sub>3,2</sub>	104.7	122.1	F-P-F	812.7	90.0
dihedral		$k_\chi$ (kJ mol <sup>-1</sup> )	$\delta$ (deg)	dihedral	
C <sub>2</sub> -N <sub>1,3</sub> -C <sub>5,4</sub> -C <sub>4,5</sub>	58.6	2	180	C <sub>8</sub> -C <sub>9</sub> -C <sub>10</sub> -H	0.67 1 0
N <sub>1</sub> -C <sub>5</sub> -C <sub>4</sub> -N <sub>3</sub>	58.6	2	180	H <sub>2,3</sub> -C <sub>4,5</sub> -N <sub>3,1</sub> -C <sub>2</sub>	12.6 2 180
N <sub>1,3</sub> -C <sub>2</sub> -N <sub>3,1</sub> -C <sub>4,5</sub>	58.6	2	180	N <sub>1,3</sub> -C <sub>5,4</sub> -C <sub>4,5</sub> -H <sub>2,3</sub>	12.6 2 180
H <sub>1</sub> -C <sub>2</sub> -N <sub>1,3</sub> -C <sub>5,4</sub>	12.6	2	180	N <sub>1,3</sub> -C <sub>2</sub> -N <sub>3,1</sub> -C <sub>6,7</sub>	0.0 2 180
H <sub>2</sub> -C <sub>4</sub> -C <sub>5</sub> -H <sub>3</sub>	8.37	2	180	H <sub>1</sub> -C <sub>2</sub> -N <sub>3,1</sub> -C <sub>6,7</sub>	0.0 2 180
C <sub>4,5</sub> -C <sub>5,4</sub> -N <sub>1,3</sub> -C <sub>7,6</sub>	0.0	1	0	H <sub>2,3</sub> -C <sub>4,5</sub> -N <sub>3,1</sub> -C <sub>6,7</sub>	0.0 2 180
C <sub>4,5</sub> -N <sub>3,1</sub> -C <sub>6,7</sub> -H	0.0	3	0	C <sub>2</sub> -N <sub>1,3</sub> -C <sub>7,6</sub> -H	0.82 2 180
C <sub>2</sub> -N <sub>3,1</sub> -C <sub>7</sub> -C <sub>8</sub>	0.42	1	180	N <sub>1</sub> -C <sub>7</sub> -C <sub>8</sub> -H <sub>9,10</sub>	0.0 3 0
C <sub>5</sub> -N <sub>1</sub> -C <sub>7</sub> -C <sub>8</sub>	0.84	1	0	C <sub>7</sub> -C <sub>8</sub> -C <sub>9</sub> -C <sub>10</sub>	0.63 1 0
N <sub>1</sub> -C <sub>7</sub> -C <sub>8</sub> -C <sub>9</sub>	0.0	1	0	H <sub>7,8</sub> -C <sub>7</sub> -C <sub>8</sub> -H <sub>9,10</sub>	0.82 3 0
H-C <sub>9</sub> -C <sub>10</sub> -H	0.67	3	0	H-C <sub>8</sub> -C <sub>9</sub> -C <sub>10</sub>	0.82 3 0
H <sub>7,8</sub> -C <sub>7</sub> -C <sub>8</sub> -C <sub>9</sub>	0.82	2	0	C <sub>7</sub> -C <sub>8</sub> -C <sub>9</sub> -H <sub>11,12</sub>	0.82 2 0
improper		$k_\psi$ (kJ mol <sup>-1</sup> rad <sup>-2</sup> )	$\psi_0$ (deg)	improper	
H <sub>1</sub> -N <sub>1</sub> -N <sub>3</sub> -C <sub>2</sub>	0.50	0		H <sub>2,3</sub> -N <sub>3,1</sub> -C <sub>4,5</sub> -C	0.50 0
N <sub>1,3</sub> -C <sub>4,5</sub> -C <sub>2</sub> -C <sub>6,7</sub>	0.60	0			