

## Supporting Information for

### Understanding the importance of atmospheric transformation in assessing the hazards of liquid crystal monomers

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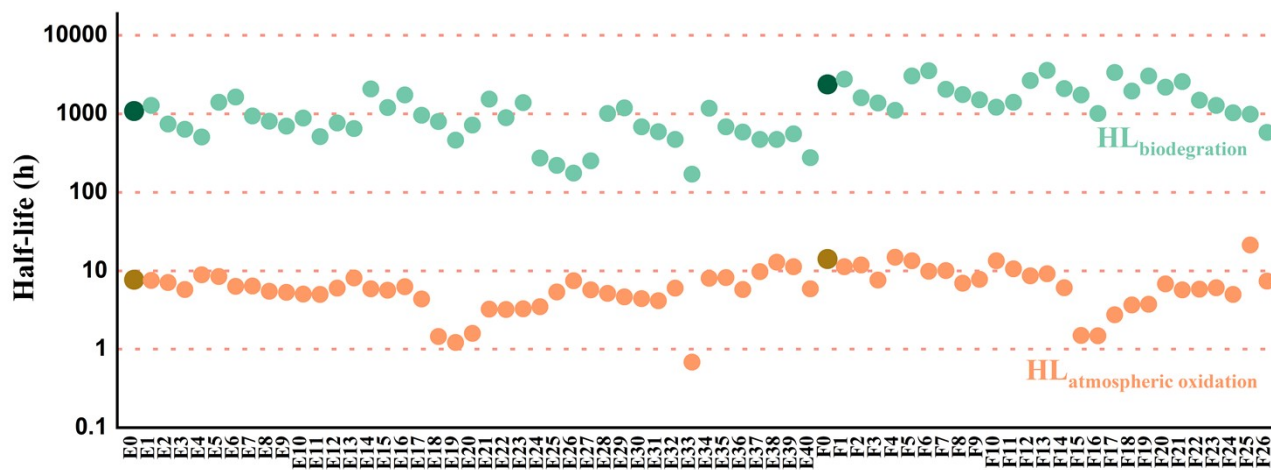
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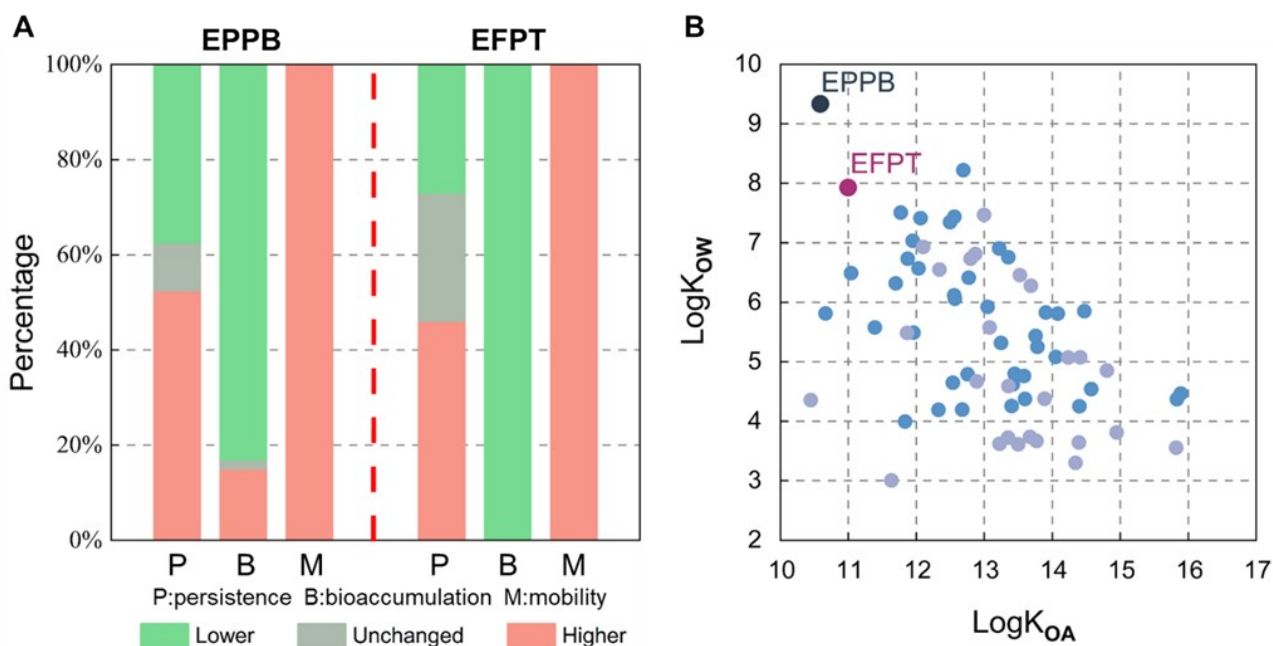
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This document contains 10 pages, including 2 figures and 1 table.

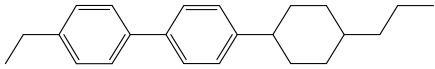
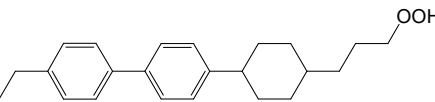
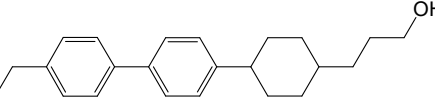
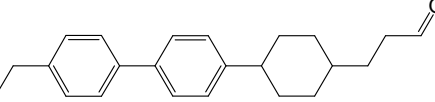
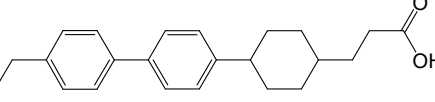
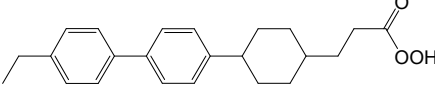
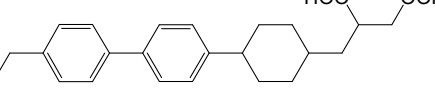
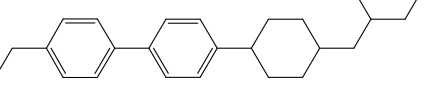
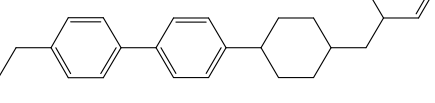
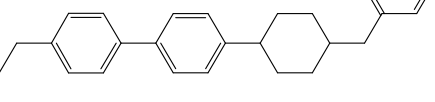


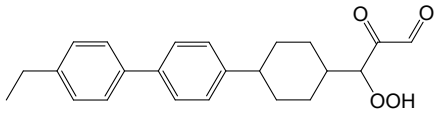
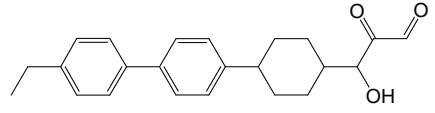
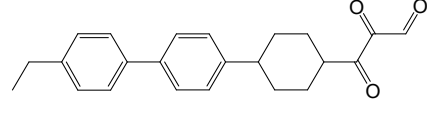
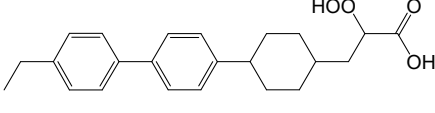
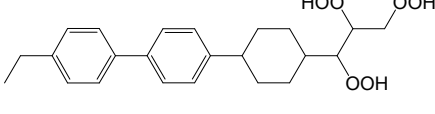
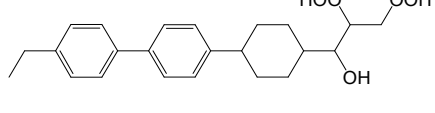
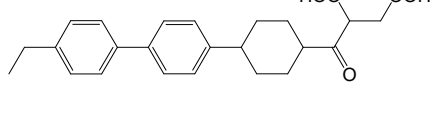
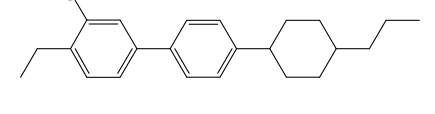
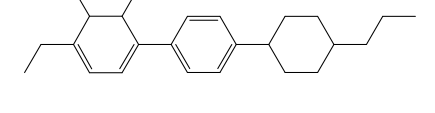
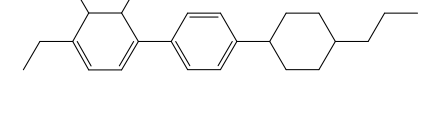
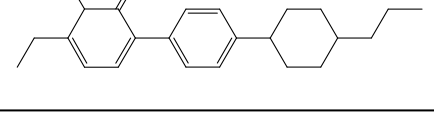
**Figure S1.** Comparison between the reaction half-lives of atmospheric photo-oxidation (orange) and biodegradation in surface media (green) of EPPB and EFPT (dark colors) and their transformation products (light colors).

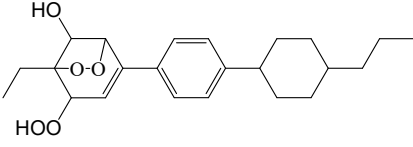
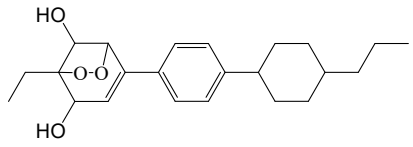
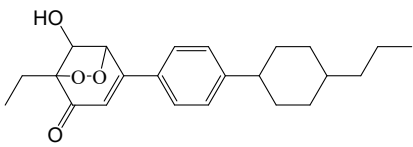
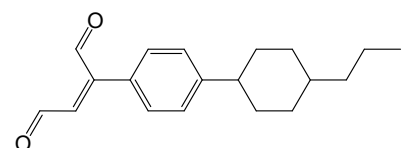
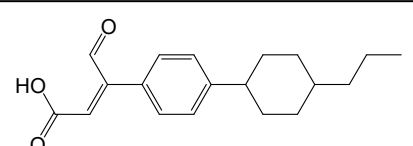
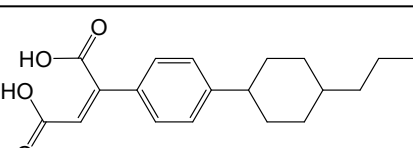
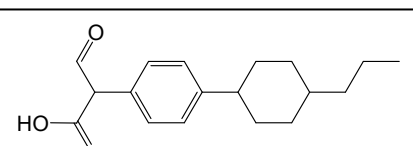
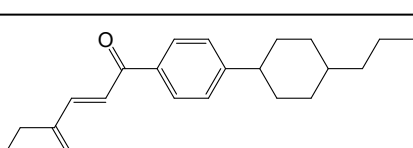
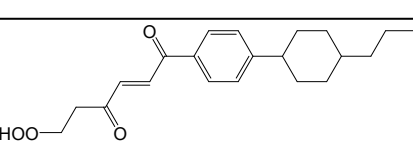
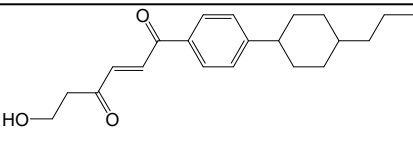


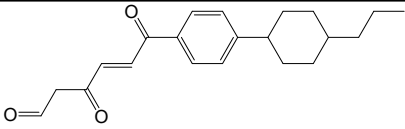
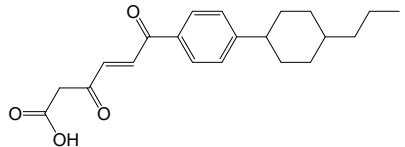
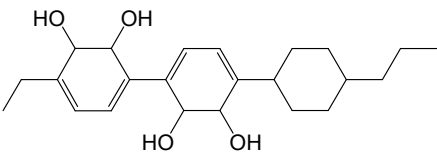
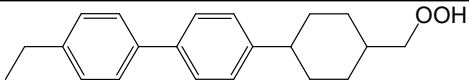
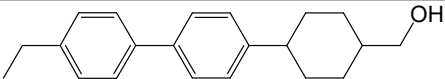
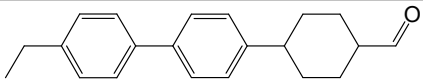
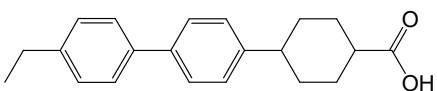
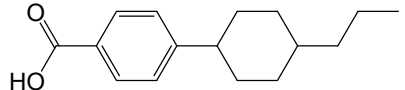
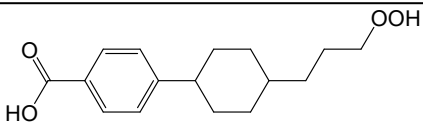
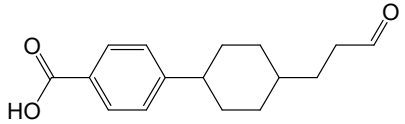
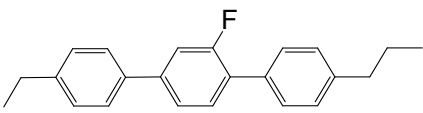
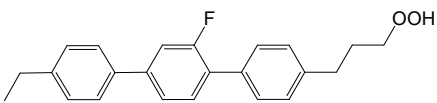
**Figure S2.** (A) The percentage of transformation products with their persistence, bioaccumulation potential and mobility higher (red), lower (green), and unchanged (grey) relative to the parent LCMs (EPPB and EFPT). Properties within  $\pm 10\%$  of the parent LCMs are considered unchanged. (B) The octanol–air ( $\log K_{OA}$ ) and octanol–water ( $\log K_{OW}$ ) partition coefficients for LCMs and their transformation products at a pH of 7. Dark blue, and light blue represent EPPB and its transformation products, respectively. Dark purple and light purple represent EFPT and its transformation products, respectively.

**Table S1.** Structures of transformation products formed from atmospheric OH oxidation of two LCMs (EPPB and EFPT).

Product ID	Chemical formula	Proposed chemical structure
E <sub>0</sub>	C <sub>23</sub> H <sub>30</sub>	
E <sub>1</sub>	C <sub>23</sub> H <sub>30</sub> O <sub>2</sub>	
E <sub>2</sub>	C <sub>23</sub> H <sub>30</sub> O	
E <sub>3</sub>	C <sub>23</sub> H <sub>28</sub> O	
E <sub>4</sub>	C <sub>23</sub> H <sub>28</sub> O <sub>2</sub>	
E <sub>5</sub>	C <sub>23</sub> H <sub>28</sub> O <sub>3</sub>	
E <sub>6</sub>	C <sub>23</sub> H <sub>30</sub> O <sub>4</sub>	
E <sub>7</sub>	C <sub>23</sub> H <sub>30</sub> O <sub>3</sub>	
E <sub>8</sub>	C <sub>23</sub> H <sub>28</sub> O <sub>3</sub>	
E <sub>9</sub>	C <sub>23</sub> H <sub>26</sub> O <sub>2</sub>	

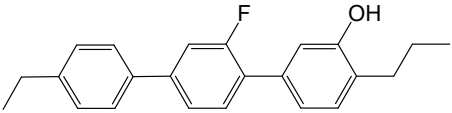
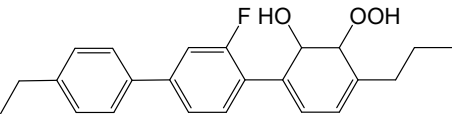
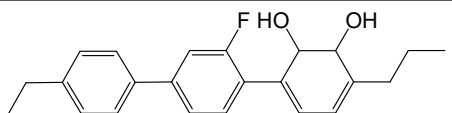
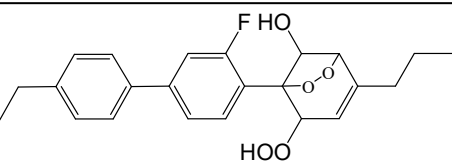
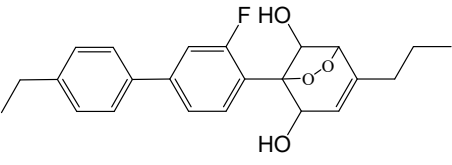
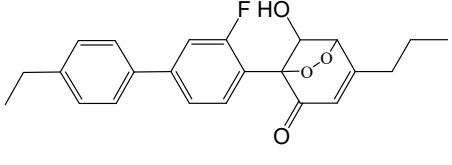
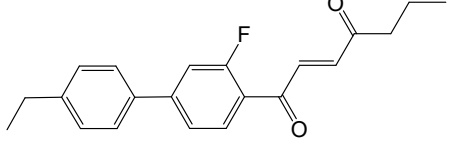
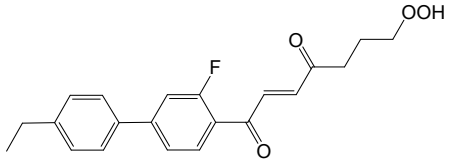
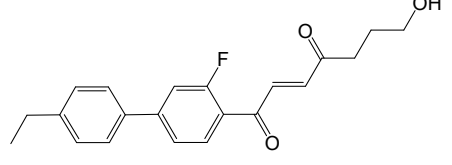
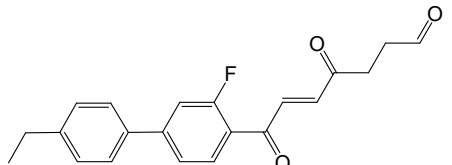
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E <sub>12</sub>	C <sub>23</sub> H <sub>24</sub> O <sub>3</sub>	
E <sub>13</sub>	C <sub>23</sub> H <sub>28</sub> O <sub>4</sub>	
E <sub>14</sub>	C <sub>23</sub> H <sub>30</sub> O <sub>6</sub>	
E <sub>15</sub>	C <sub>23</sub> H <sub>30</sub> O <sub>5</sub>	
E <sub>16</sub>	C <sub>23</sub> H <sub>28</sub> O <sub>5</sub>	
E <sub>17</sub>	C <sub>23</sub> H <sub>30</sub> O	
E <sub>18</sub>	C <sub>23</sub> H <sub>32</sub> O <sub>3</sub>	
E <sub>19</sub>	C <sub>23</sub> H <sub>32</sub> O <sub>2</sub>	
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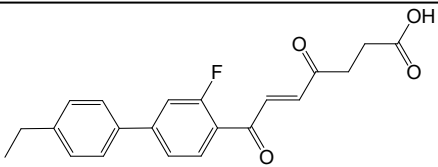
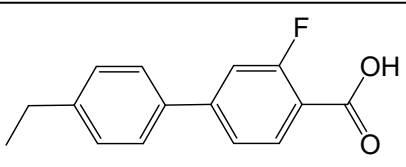
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F <sub>1</sub>	C <sub>23</sub> H <sub>23</sub> FO <sub>2</sub>	

F <sub>2</sub>	C <sub>23</sub> H <sub>23</sub> FO	
F <sub>3</sub>	C <sub>23</sub> H <sub>21</sub> FO	
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