## Supplementary Information

## Development of new ecofriendly detergent/dispersant/antioxidant/antiwear additives from L-histidine for biolubricant applications

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## <sup>13</sup>C NMR of *HDS-M* in d<sup>6</sup>-DMSO



Fig. S1: <sup>13</sup>C NMR of *HDS-M* in d<sup>6</sup>-DMSO.

## **Biodegradability test**

Biodegradability of the synthesized additives was evaluated using ASTM D5864. Three test sample oils were prepared and tested: sample 1 having only base ester, i.e., polyol; sample 2 having 0.5% *Ca-HDS-L* in polyol; and sample 3 having 0.5% *Ca-HDS-M* in polyol. The experimental value of cumulative CO<sub>2</sub> evolved for sample 1 (polyol only) has been found to be 69.88 %. This value for sample 2 (0.5% additive 1 in base ester) is 70.71 % and for sample 3 (0.5% additive 2 in base ester) is 68.24 %. All these values are greater than 65, indicating a complete biodegradable nature.