1. ABOUT THE DATASET

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Title: Dataset associated with "Structure-Property Relationships in Auxetic Liquid Crystal Elastomers – The Effect of Spacer Length"

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Organisation(s): University of Leeds

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Publication Year: 2024

Description: This dataset contains the data associated with the article titled "Structure-Property Relationships in Auxetic Liquid Crystal Elastomers – The Effect of Spacer Length", published in*Polymers*. This data is provided in the form of the files used to plot the figures in the published article. The data is mainly focused on material properties of the liquid crystal elastomers (LCEs) detailed in the article, including: mechanical testing of the LCEs, thermal expansion measurements, phase transition analysis and order parameter measurements. Data to support the confirmation of the structure of monomers synthesised is also provided, by way of NMR spectra.

Cite as: Berrow, Stuart; Raistrick, Thomas; Mandle, Richard; Gleeson, Helen (2024): Dataset associated with "Structure-Property Relationships in Auxetic Liquid Crystal Elastomers – The Effect of Spacer Length". University of Leeds. [Dataset] https://doi.org/10.5518/1449.

Related publication: S. R. Berrow, T. Raistrick, R. J. Mandle, H. F. Gleeson, Structure-Property Relationships in Auxetic Liquid Crystal Elastomers – The Effect of Spacer Length, Polymers, 2024, Accepted

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2. TERMS OF USE

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3. PROJECT AND FUNDING INFORMATION

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Title: Stretching the boundaries; new soft matter systems

Dates: 15th August 2022 – 14th August 2027

Funding organisation: Engineering and physical sciences research council

Grant no.: EP/V054724/1

4. CONTENTS

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File listing

* **Figure7.zip** – A zip folder containing the data file used to produce Figure 7 in the research article, i.e., the mechanical analysis of the polymers conducted at room temperature.
* **Figure9**.**zip** – A zip folder containing the data file used to produce Figure 9 in the research article, i.e., the mechanical analysis of the polymers conducted at reduced temperature.
* **SupplementaryData.zip** – A zip folder containing the data pertaining to the supplementary information pertaining to the manuscript. In short these files include NMR spectra,

For all of the files named FigureX.zip (where X indicates a number (e.g. 9)), the files within are .opju files, and are to be opened in Origin 2023b software. The files within Supplementaryinformation.zip are a mixture of .opju files (opened in origin), NMR spectra which are suitable for use with standard NMR software (e.g. MestreNova, Topspin etc.), and .pdf files.

5. METHODS

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Details of all of the methods used to collect this data can be found in the associated publication, ‘Structure-Property Relationships in Auxetic Liquid Crystal Elastomers – The Effect of Spacer Length’, published in *Polymers*.