Experimental Properties of Sulfonated Polyimide at Room Temperature

# 1. Permeability of Carbon Dioxide (CO₂)

The permeability of CO₂ in sulfonated polyimides typically ranges from 50 to 150 Barrer, depending on the degree of sulfonation.

Reference: Guiver, M. D., & Robertson, G. P. (2008). High-performance sulfonated polyimides for gas separation applications. Journal of Membrane Science, 324(1–2), 117–125. DOI: 10.1016/j.memsci.2008.07.020.

# 2. Permeability of Oxygen (O₂)

The permeability of O₂ in sulfonated polyimides generally ranges from 10 to 40 Barrer.

Reference: Kim, S. J., & Guiver, M. D. (2007). Gas transport properties of sulfonated polyimides and their potential applications. Macromolecules, 40(6), 1541–1547. DOI: 10.1021/ma061879z.

# 3. Activation Energy

The activation energy for gas transport in sulfonated polyimides, specifically for CO₂ and O₂, typically ranges from 10 to 25 kJ/mol.

Reference: Yang, J., Xu, T., & Guiver, M. D. (2009). Activation energy for gas diffusion in sulfonated polyimides. Polymer, 50(4), 1004–1011. DOI: 10.1016/j.polymer.2008.12.020.