

Figures

Figure 1: Oxidation profile by micro-FTIR spectroscopy for the materials E-CR, E-ATHU and E-SiU aged at 80°C during 300h and γ -irradiated at room temperature at 510 kGy and at 80°C at 165 kGy. (Absorbance at 1713 cm^{-1} is normalized to the absorbance measured on the sample surface)

Figure 2: a) Swelling ratio Q versus irradiation dose or time for E-CR for the three ageing methods (lines are guide for the eyes) b) elastic modulus measured at 80°C versus irradiation dose or time for E-CR for the three ageing methods (lines are guide for the eyes)

Figure 3: Large strain behavior observed at 80°C of E-CR for each ageing method.

Figure 4: Average strains and stresses at break of E-CR rubber deduced from tensile tests performed at 80°C, for each ageing condition

Figure 5: $F_p + \sqrt{F_p}$ versus irradiation dose: for E-CR (experimental data after irradiation at 25°C (\square) and 80°C (\circ), and linear fit (dashed line)) and for E-ATHU (experimental data after irradiation at 25°C (\blacksquare) and 80°C (\bullet), and linear fit (bold line))

Figure 6: Swelling ratio Q versus time or irradiation dose for E-CR and E-ATHU for each ageing condition; lines are guides for the eyes

Figure 7: Elastic modulus measured at 80°C versus irradiation dose or time for E-150ATHU and E-CR, for each ageing methods ; lines are guides for the eyes

Figure 8: Large strain behavior observed at 80°C of E-ATHU after each ageing method

Figure 9: Average strains and stresses at break of E-ATHU rubber deduced from tensile tests performed at 80°C, after each ageing condition

Figure 10: Swelling ratio Q versus time or irradiation dose for E-CR and E-SiU, for the three ageing conditions; lines are guides for the eyes

Figure 11: Elastic modulus measured at 80°C versus irradiation dose or time for E-SiU and E-CR; lines are guides for the eyes

Figure 12: Large strain behavior observed at 80°C of E-SiU after ageing, for the three methods ageing (rupture is not observed)

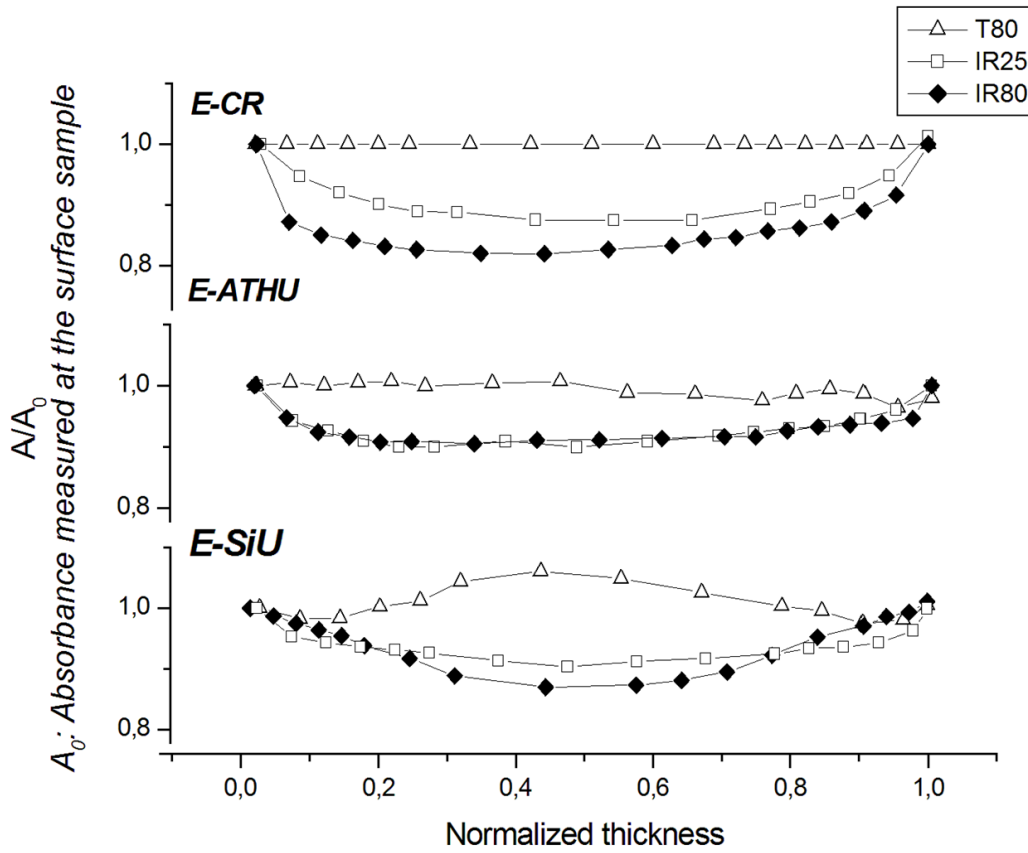


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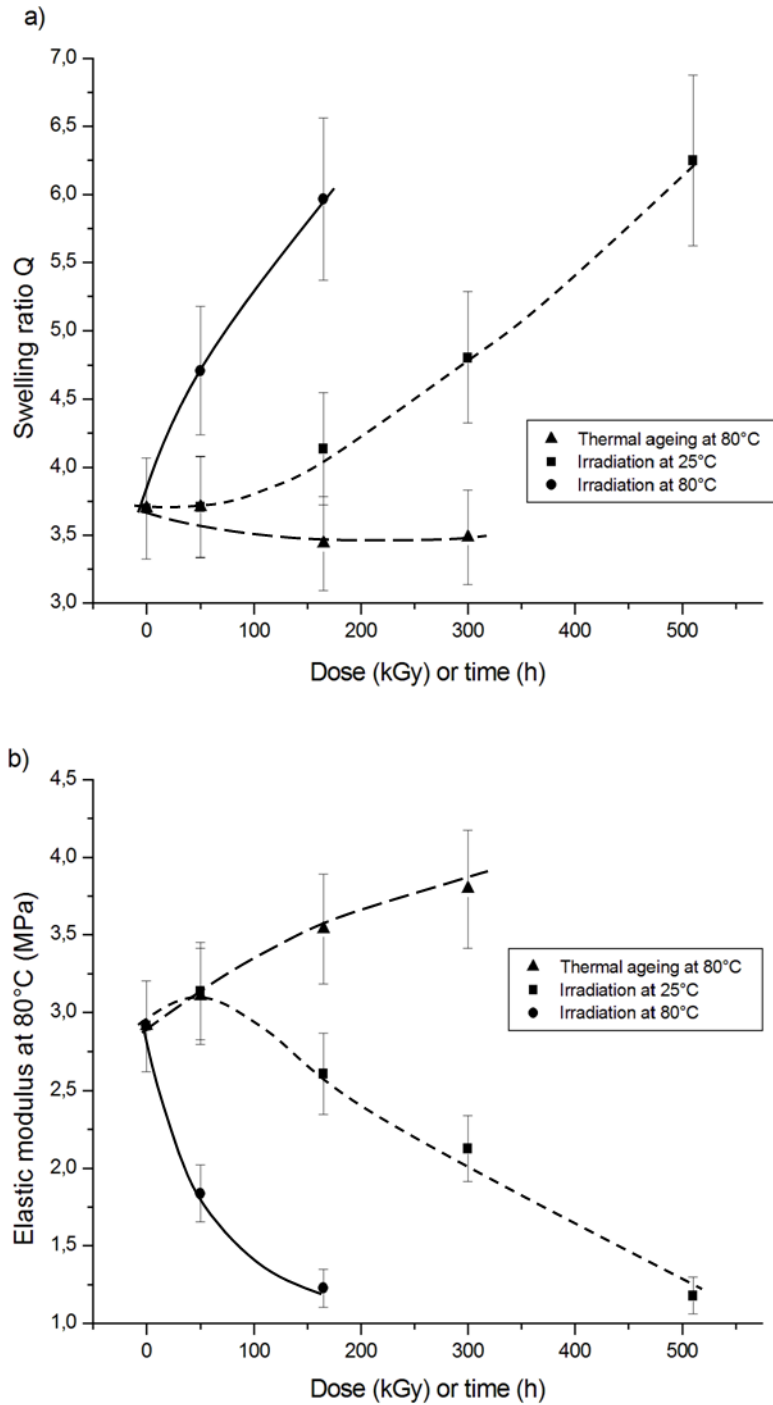


Figure 2: a) Swelling ratio Q versus irradiation dose or time for E-CR for the three ageing methods (lines are guide for the eyes) b) elastic modulus measured at 80°C versus irradiation dose or time for E-CR for the three ageing methods (lines are guide for the eyes)

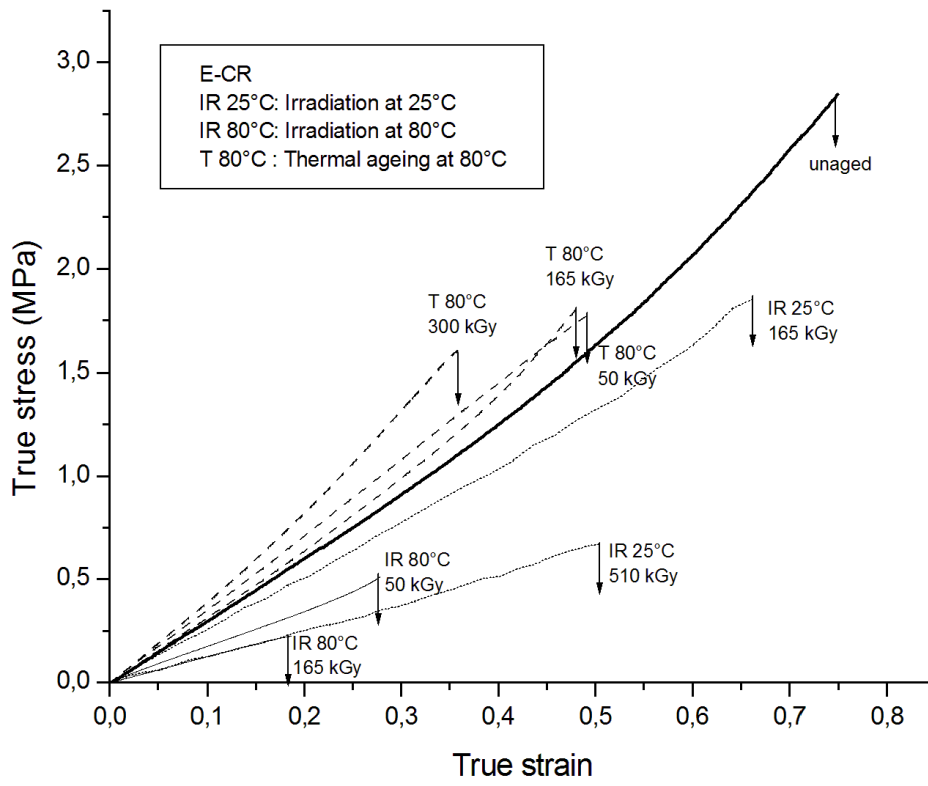


Figure 3: Large strain behavior observed at 80°C of E-CR for each ageing method.

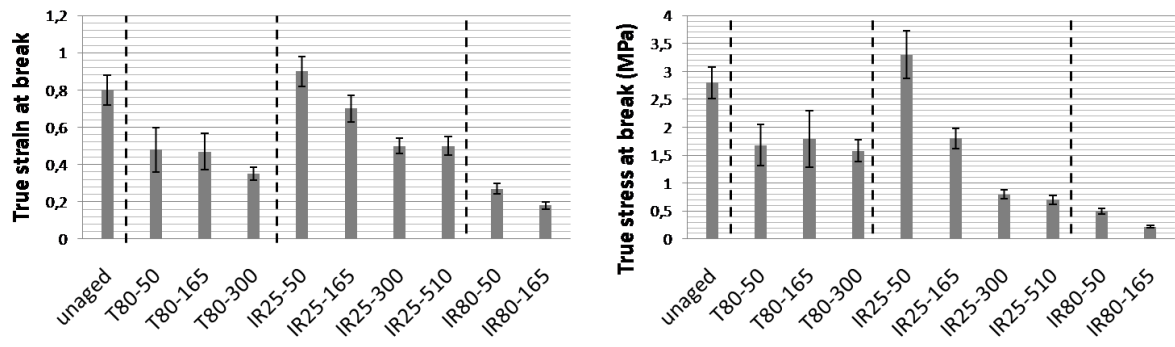


Figure 4: Average strains and stresses at break of E-CR rubber deduced from tensile tests performed at 80°C, for each ageing condition.

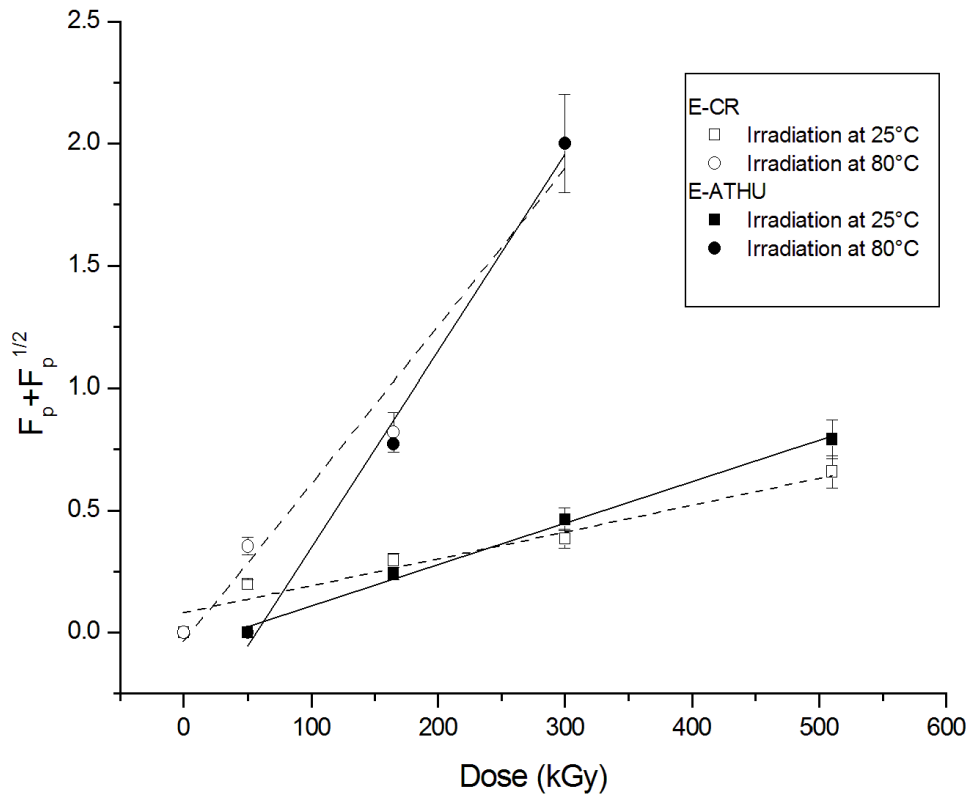


Figure 5: $F_p + \sqrt{F_p}$ versus irradiation dose: for E-CR (experimental data after irradiation at 25°C (□) and 80°C (○), and linear fit (dashed line)) and for E-ATHU (experimental data after irradiation at 25°C (■) and 80°C (●), and linear fit (bold line)).

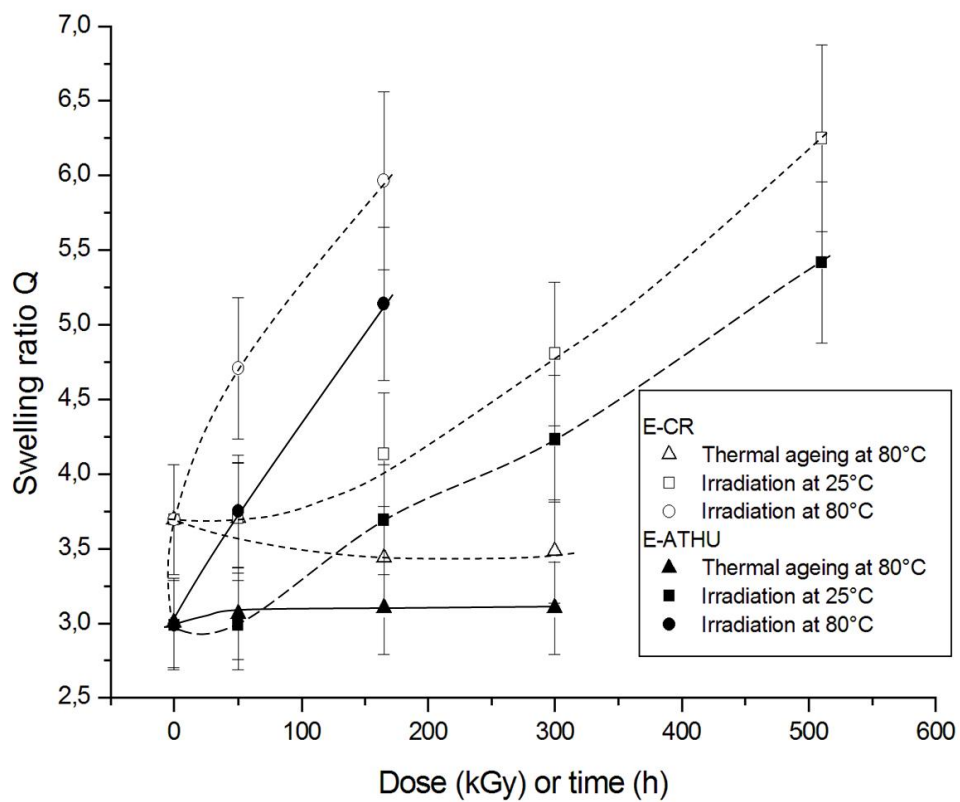


Figure 6: Swelling ratio Q versus time or irradiation dose for E-CR and E-ATHU for each ageing condition; lines are guides for the eyes.

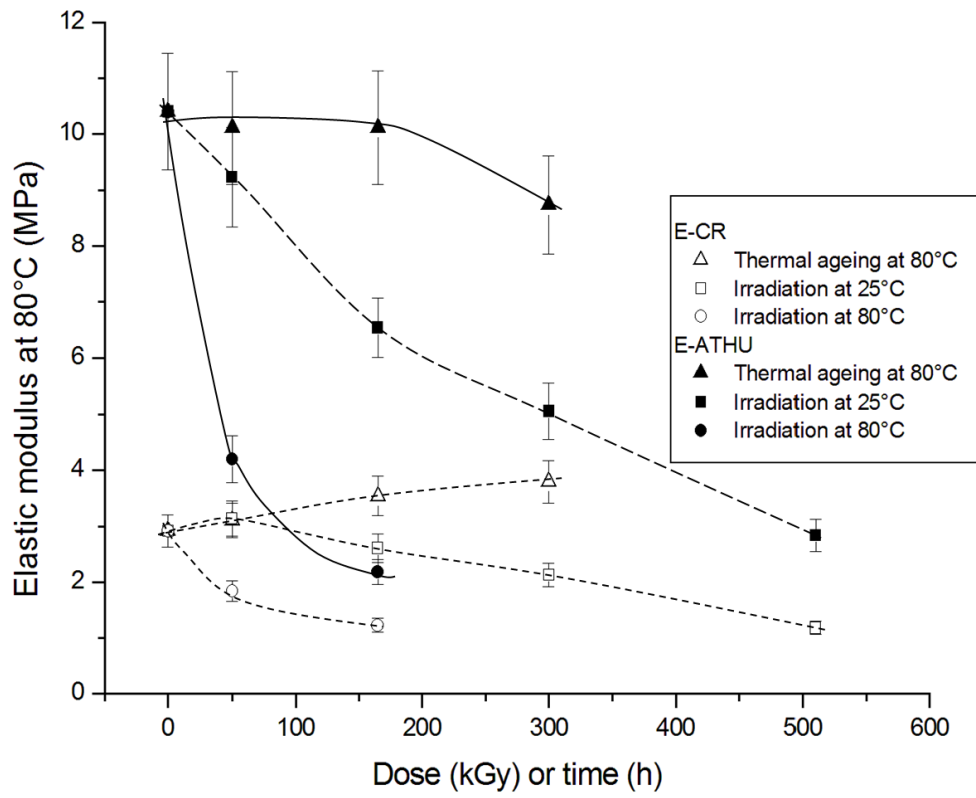


Figure 7: Elastic modulus measured at 80°C versus irradiation dose or time for E-150ATHU and E-CR, for each ageing methods ; lines are guides for the eyes.

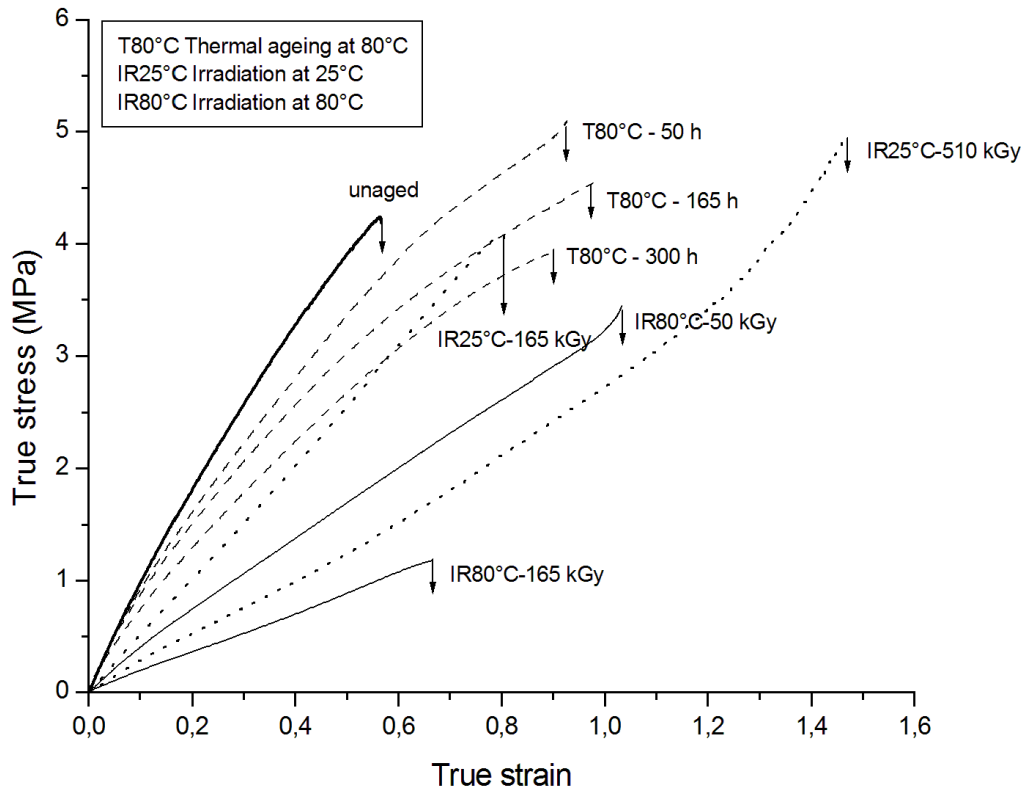


Figure 8: Large strain behavior observed at 80°C of E-ATHU after each ageing method

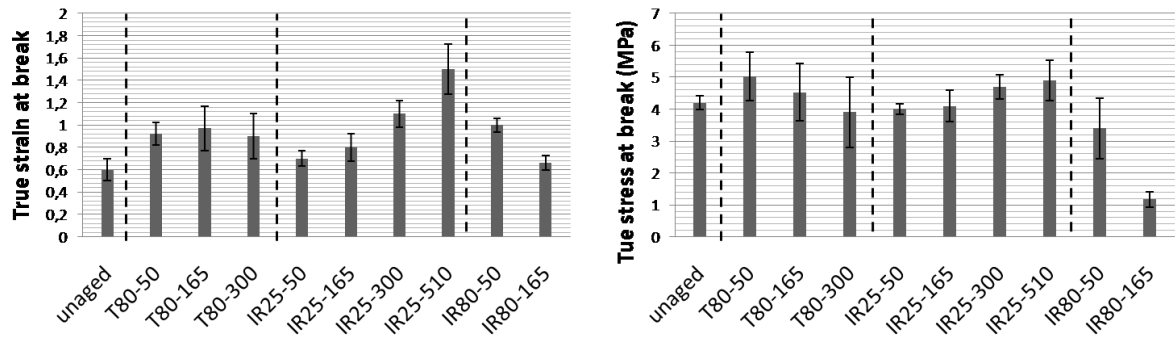


Figure 9: Average strains and stresses at break of E-ATHU rubber deduced from tensile tests performed at 80°C, after each ageing condition.

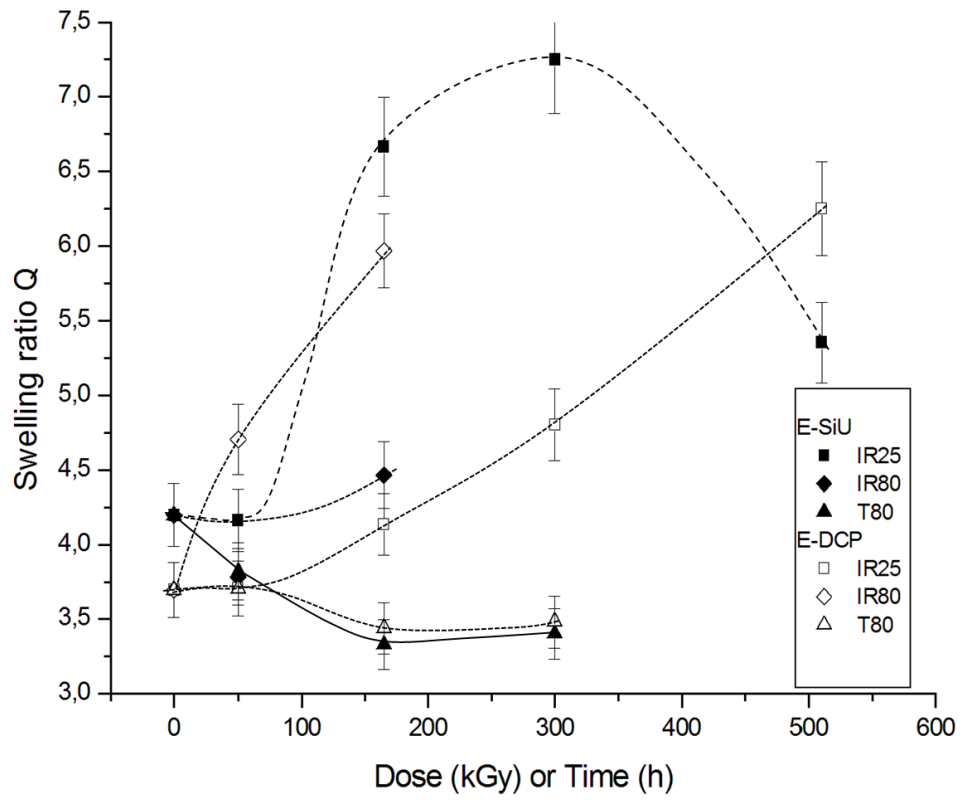


Figure 10: Swelling ratio Q versus time or irradiation dose for E-CR and E-SiU, for the three ageing conditions; lines are guides for the eyes.

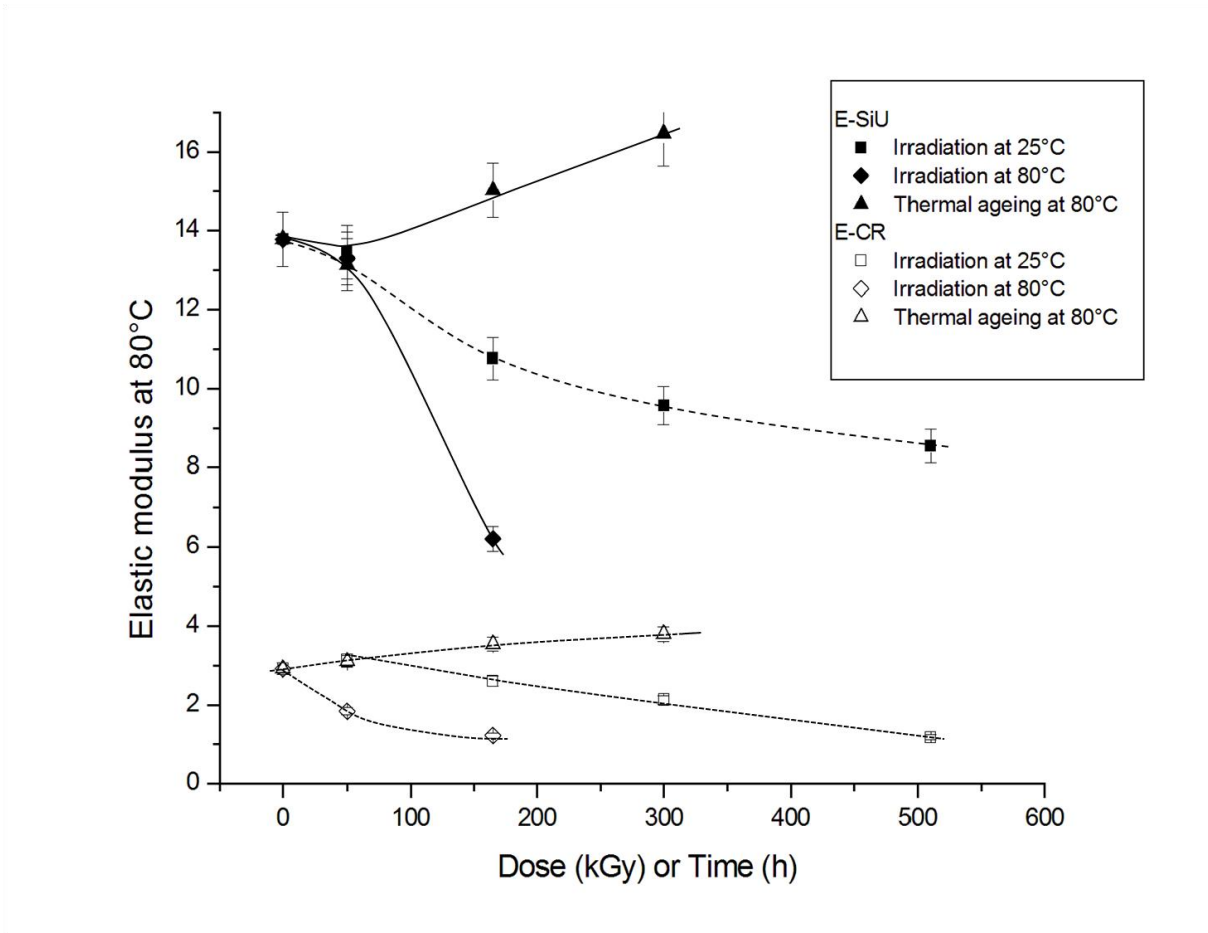


Figure 11: Elastic modulus measured at 80°C versus irradiation dose or time for E-SiU and E-CR; lines are guides for the eyes.

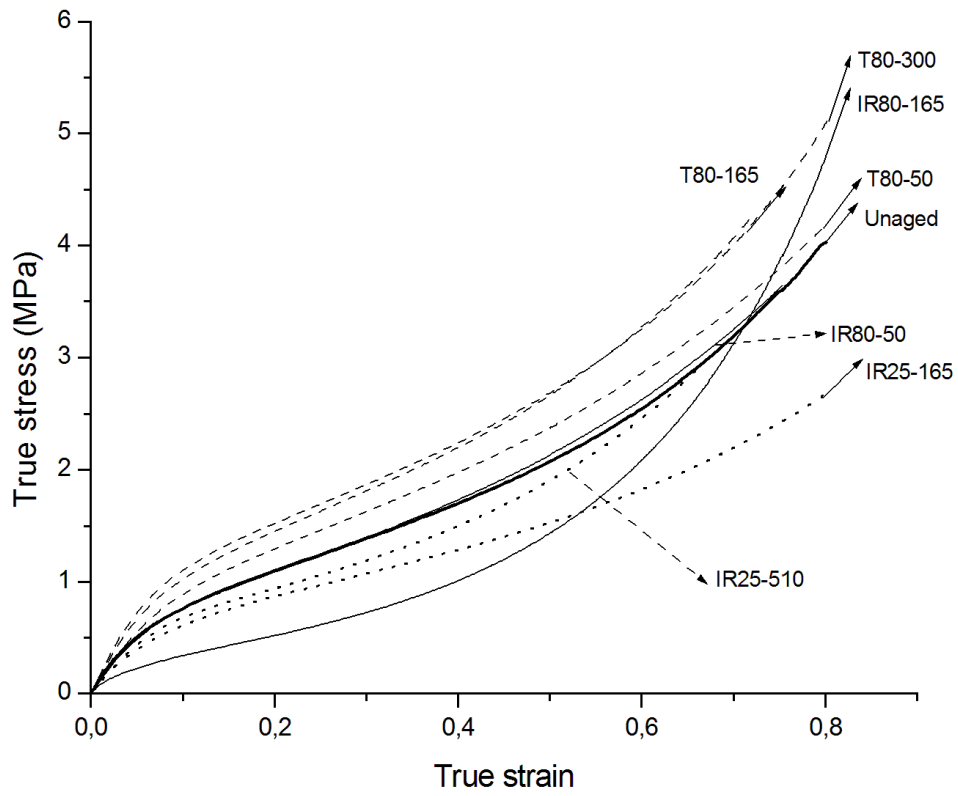


Figure 12: Large strain behavior observed at 80°C of E-SiU after ageing, for the three methods ageing (rupture is not observed)

