

Table 1: Crystallinity(χ_c) and thermal stability of components in PCL/PLA blends

| Sample | DSC | | | WAXS | | |
|--------|------------------|------------------|-----------------|------------------|------------------|-------|
| | χ_{PCL} (%) | χ_{PLA} (%) | T_{mPCL} (°C) | χ_{PCL} (%) | χ_{PLA} (%) | R (%) |
| 0% | 17.8 | 6.13 | 60.2 | 27.65 | 4.81 | 9.48 |
| 25% | 21.6 | 4.77 | 60.3 | 31.95 | 6.41 | 5.42 |
| 50% | 24.1 | 4.87 | 61.1 | 34.00 | 7.84 | 5.81 |
| 75% | 23.3 | 5.60 | 59.2 | 31.00 | 7.21 | 8.68 |
| 100% | 28.6 | 4.43 | 63.4 | 33.20 | 4.56 | 9.34 |
| 125% | 28.8 | 5.17 | 62.0 | 30.09 | 6.96 | 7.98 |

χ_c calculated using Δ_m^c of PCL of $139.5(\text{J} \cdot \text{g}^{-1})$, Δ_m^c of PLA of $79(\text{J} \cdot \text{g}^{-1})$.

In MDI jade, R is the *residual errors of fit* when crystallinity was calculated and required $\leq 10\%$.

Table 2: SAXS analysis of PCL/PLA blends

| Sample | $q(\text{nm}^{-1})$ | Lamellar width(nm) | Herman factor |
|--------|---------------------|--------------------|---------------|
| 0% | 0.3663 | 17.15 | 0.2841 |
| 25% | 0.3948 | 15.91 | 0.2323 |
| 50% | 0.3948 | 15.91 | 0.2709 |
| 75% | 0.3995 | 15.72 | 0.3236 |
| 100% | 0.3901 | 16.10 | 0.4562 |
| 125% | 0.3922 | 16.02 | 0.5971 |

Table 3: Dynamic properties of the PCL/PLA blends

| Sample | Young's Modulus(Mpa) | Tensile Strength(Mpa) | Elongation at break(%) |
|--------|----------------------|-----------------------|------------------------|
| 0% | 3799 | 12.14 | 13.26 |
| 25% | 4165 | 12.67 | 9.910 |
| 50% | 4880 | 17.37 | 11.03 |
| 75% | 6124 | 17.60 | 10.95 |
| 100% | 7499 | 20.21 | 10.59 |
| 125% | 5730 | 20.10 | 7.667 |

Table 4: Main thermal degradation parameters of composites in terms of onset temperature of degradation($T_{5\%}$), degradation temperature of PLA($T_{deg-PLA}$), degradation temperature of PCL($T_{deg-PCL}$)

| Sample | $T_{5\%}$ (°C) | $T_{deg-PLA}$ (°C) | $T_{deg-PCL}$ (°C) |
|--------|----------------|--------------------|--------------------|
| 0% | 319.0 | 357.09 | 421.42 |
| 25% | 319.0 | 359.52 | 421.23 |
| 50% | 315.3 | 363.32 | 420.74 |
| 75% | 321.3 | 361.04 | 423.88 |
| 100% | 321.0 | 364.73 | 422.29 |
| 125% | 322.7 | 358.29 | 421.87 |