Abstract： Piezoelectrets made by cross-linked polypropylene (XPP) foam sheet are prepared by hot-stretching process. The microstructure of stretched films is observed by SEM technique. The piezoelectric d_{33}-coefficients of the samples, with various degrees of elongation, are determined by a quasi-static method. The applied pressure dependence of piezoelectric d_{33}-coefficients is investigated. The influence of surface structure on piezoelectric activity is discussed also. The results show that the piezoelectricity starts at the degree of elongation 70%. The piezoelectric d_{33}-coefficients are enhanced with the increase of elongation degree. The d_{33} value of 35 pC/N is obtained for the sample stretched to elongation degree of 150%. All the samples show good linearity in the range of applied pressure up to 30 kPa. Improved piezoelectric activity was obtained for the stretched XPP films when the rough surfaces were exposed to corona.