It is well known that the optimal investment strategy in the classical utility maximization problem can be very risky. As a consequence, in recent research a risk constraint was added to the classical utility maximization problem to control the risky part. We study the utility maximization problem when a convex risk measure is used in the risk constraint. As a special case a lognormal model with partial information on the drift and an entropic risk constraint will be considered. The optimal terminal wealth and the optimal trading strategies are calculated. Numerical examples illustrate the analytic results. (Received September 16, 2008)