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H-type groups are a special class of nilpotent Lie groups which generalize the Heisenberg group, and provide a natural setting for the study of second-order partial differential operators which are not elliptic, but only subelliptic. In this talk I will give a brief overview of these objects, and then describe a result which gives precise upper and lower pointwise estimates for the subelliptic heat kernel associated to such a subelliptic operator on an H-type group. (Received September 03, 2008)