A small red black hole

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What kind of a black hole is the color red? Assuming Hawking's radiation formula,

$$T = \frac{\hbar c^3}{8\pi G M k} \approx \frac{1.225 \times 10^{23} K \cdot kg}{M}$$

where

$$\hbar = 1.054 \times 10^{-34} J \cdot s$$

$$c = 2.997 \times 10^{8} m/s$$

$$G = 6.674 \times 10^{-11} N m^2/kg^2$$

$$k = 1.381 \times 10^{-23} J/K$$

Assuming the black hole is a black body, with a spectrum that peaks at λ_{max}, Wien's law states:

$$\lambda_{max}(nm) = \frac{2.898 \times 10^{6} nm \cdot K}{T}$$

Choosing the color red, which has wavelength, $\lambda = 700nm$, we have

$$T = \frac{2.898 \times 10^{6} nm \cdot K}{700nm} = 4140K$$

Substituting this into Hawking's formula,

$$M \approx \frac{1.225 \times 10^{23} K \cdot kg}{4140K} \approx 3 \times 10^{19} kg$$

WIth a Schwarzschild radius of

$$R = \frac{2GM}{c^2} \approx 44.5\ nm$$