

Which of these is the best surface for absorbing thermal radiation (silver, white, shiny black, dull black)?

Answer: If the body absorbs all the visible light falling on it, its surface will be dull black.

According to the Kirchhoff's law of thermal radiation, for a body of any arbitrary material (any shape and chemical nature), emitting and absorbing thermal electromagnetic radiation in thermodynamic equilibrium, the ratio of its emissive power to its dimensionless coefficient of absorption is equal to the perfect black-body emissive power, which is the same for all bodies at the given temperature.

Then, if the body has a dull black surface in visible light, it will also have a biggest coefficient of absorption of thermal radiation among other surfaces.