This material is copied from Heat Transfer on the website <http://www.roymech.co.uk/Related/Thermos/Thermos_HeatTransfer.html>

This website is extremely technical and very slow to load, so by making the relevant data available in a file access for students becomes possible.

Materials with relatively high heat transfer coefficients are referred to as thermal conductors. Materials with relatively low heat transfer coefficients are referred to as thermal insulators. The table below lists heat transfer coefficients (k) for a variety of materials, in units of W/m/°C.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Material |  | k |  | Material | k |
| Aluminum |  | 237 |  | Sand | 0.06 |
| Brass |  | 110 |  | Cellulose | 0.039 |
| Copper |  | 398 |  | Glass wool | 0.040 |
| Gold |  | 315 |  | Cotton wool | 0.029 |
| Cast Iron |  | 55 |  | Sheep's wool | 0.038 |
| Lead |  | 35.2 |  | Cellulose | 0.039 |
| Silver |  | 427 |  | Expanded Polystyrene | 0.03 |
| Zinc |  | 113 |  | Wood | 0.13 |
| Polyethylene (HDPE) |  | 0.5 |  | Acetone | 0.16 |
| Polyvinyl chloride (PVC) |  | 0.19 |  | Water | 0.58 |
| Dense Brick |  | 1.6 |  | Air | 0.024 |
| Concrete (Low Density) |  | 0.2 |  | Argon | 0.016 |
| Concrete (High Density) |  | 1.5 |  | Helium | 0.142 |
| Ice |  | 2.18 |  | Oxygen | 0.024 |
| Porcelain |  | 1.05 |  | Nitrogen | 0.024 |

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