

# Physical and chemical characteristics of materials essay

[Environment](#), [Water](#)



## **How do the physical and chemical characteristics of materials affect their movement, persistence, distribution, and fate in the environment?**

The chemical and physical characteristics of certain materials play a major role in how they interact with the environment. Physical factors like the solubility of the material affect its movement. If a material is not soluble in water, it will not be dissolved by water in the environment and will therefore maintain its integrity. A substance which is soluble in water will move easily through the hydrological cycle. Hydrophilic substances have high rates of biodegradation, meaning they break down easily. Materials which are lipophilic are known to bioaccumulate more readily than lipophilic substances. The state of the material is also a factor because a solid, liquid or gas will have different modes of interaction with different elements of the environment (EHT, 2011).

Some substances are very persistent as they tend to remain in the environment for longer periods of time. This can be attributed directly to their rates of degradation in the environment. The purity of a material also affects its environmental interactions. A substance may break down more easily or slower depending on the purity of the material. The reactivity of a material may also affect its distribution and persistence because if the material has low reactivity with the other elements it interacts with in the environment, it will persist in the environment for a longer time (Zhang, 2010). In conclusion, the chemical and physical characteristics of a material determine how it interacts with the environment. Factors like its solubility,

state, reactivity and persistence and others are instrumental in determining how the material will move in the environment (Calow, 1998)

## References

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