# Color Material Expressions

Material expressions that perform actions on color inputs.



# Desaturation

The **Desaturation** expression desaturates its input, or converts the colors of its input into shades of gray, based a certain percentage.

| Item | Description |
| --- | --- |
| Properties | |
| **Luminance Factors** | Specifies the amount that each channel contributes to the desaturated color. This is what controls that green is brighter than red which is brighter than blue when desaturated. |
| Inputs | |
| **Fraction** | Specifies the amount of desaturation to apply to the input. Percent can range from 0.0(full original color, no desaturation) to 1.0 (fully desaturated). |
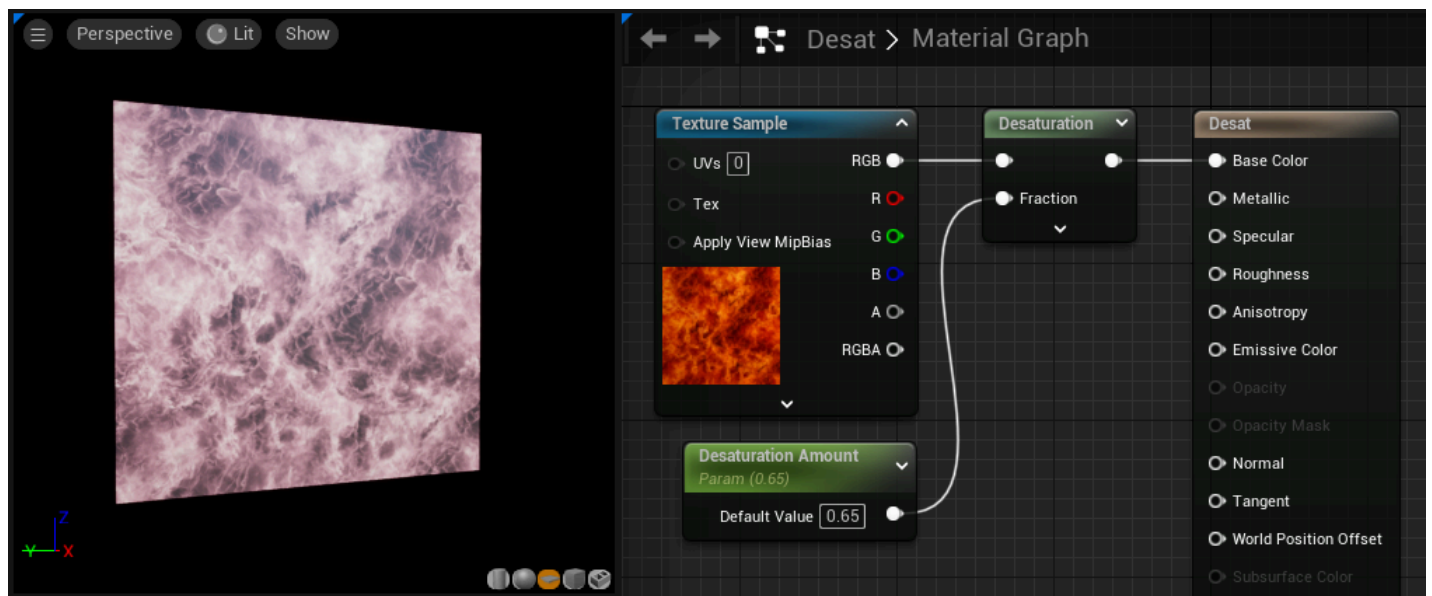
**Programmers:** Define desaturated color [D], input color [I] and luminance factor [L]. The output will be `O = (1 - Percent)*( D.dot( I )) + Percent * I`