



Some materials



What

Introducing a class for selection of a set of materials

There is always a problem determining which materials to use. Some sources are OpenGL materials [\[1\]](#) and Material Type Settings for OpenGL [\[2\]](#)

You may also experiment with materials in the editor in module [Material Editor](#)



```
//Brass
float[] mat_ambient ={ 0.329412f, 0.223529f, 0.027451f,1.0f };
float[] mat_diffuse ={ 0.780392f, 0.568627f, 0.113725f, 1.0f };
float[] mat_specular ={ 0.992157f, 0.941176f, 0.807843f, 1.0f };
float shine = 27.8974f;
```



```
// Bronze
float[] mat_ambient ={ 0.2125f, 0.1275f, 0.054f, 1.0f };
float[] mat_diffuse ={ 0.714f, 0.4284f, 0.18144f, 1.0f };
float[] mat_specular ={ 0.393548f, 0.271906f, 0.166721f, 1.0f };
float shine = 25.6f;
```



```
//Polished bronze
float[] mat_ambient ={0.25f, 0.148f, 0.06475f, 1.0f };
float[] mat_diffuse ={0.4f, 0.2368f, 0.1036f, 1.0f };
float[] mat_specular ={0.774597f, 0.458561f, 0.200621f, 1.0f };
float shine =76.8f ;
```



```
//Chrome
float[] mat_ambient ={0.25f, 0.25f, 0.25f, 1.0f };
float[] mat_diffuse ={0.4f, 0.4f, 0.4f, 1.0f };
float[] mat_specular ={0.774597f, 0.774597f, 0.774597f, 1.0f };
float shine = 76.8f;
```



```
//Copper
float[] mat_ambient ={ 0.19125f, 0.0735f, 0.0225f, 1.0f };
float[] mat_diffuse ={0.7038f, 0.27048f, 0.0828f, 1.0f };
float[] mat_specular ={0.256777f, 0.137622f, 0.086014f, 1.0f };
float shine = 12.8f;
```



```
//Polished copper
float[] mat_ambient ={ 0.2295f, 0.08825f, 0.0275f, 1.0f };
float[] mat_diffuse ={0.5508f, 0.2118f, 0.066f, 1.0f };
float[] mat_specular ={0.580594f, 0.223257f, 0.0695701f, 1.0f };
float shine =51.2f ;
```



```
//Gold
float[] mat_ambient ={ 0.24725f, 0.1995f, 0.0745f, 1.0f };
float[] mat_diffuse ={0.75164f, 0.60648f, 0.22648f, 1.0f };
float[] mat_specular ={0.628281f, 0.555802f, 0.366065f, 1.0f };
float shine =51.2f ;
```



```
//Polished gold
float[] mat_ambient ={ 0.24725f, 0.2245f, 0.0645f, 1.0f };
float[] mat_diffuse ={0.34615f, 0.3143f, 0.0903f, 1.0f };
float[] mat_specular ={ 0.797357f, 0.723991f, 0.208006f, 1.0f};
float shine =83.2f ;
```



```
//Tin
float[] mat_ambient ={ 0.105882f, 0.058824f, 0.113725f, 1.0f };
float[] mat_diffuse ={0.427451f, 0.470588f, 0.541176f, 1.0f };
float[] mat_specular ={0.333333f, 0.333333f, 0.521569f, 1.0f };
float shine = 9.84615f;
```



```
//Silver
float[] mat_ambient ={ 0.19225f, 0.19225f, 0.19225f, 1.0f };
float[] mat_diffuse ={ 0.50754f, 0.50754f, 0.50754f, 1.0f};
float[] mat_specular ={0.508273f, 0.508273f, 0.508273f, 1.0f };
float shine = 51.2f;
```



```
//Polished silver
float[] mat_ambient ={ 0.23125f, 0.23125f, 0.23125f, 1.0f };
float[] mat_diffuse ={0.2775f, 0.2775f, 0.2775f, 1.0f };
float[] mat_specular ={0.773911f, 0.773911f, 0.773911f, 1.0f };
float shine =89.6f ;
```



```
//Emerald
float[] mat_ambient ={ 0.0215f, 0.1745f, 0.0215f, 0.55f };
float[] mat_diffuse ={0.07568f, 0.61424f, 0.07568f, 0.55f };
float[] mat_specular ={0.633f, 0.727811f, 0.633f, 0.55f };
float shine = 76.8f;
```



```
//Jade
float[] mat_ambient ={ 0.135f, 0.2225f, 0.1575f, 0.95f };
float[] mat_diffuse ={0.54f, 0.89f, 0.63f, 0.95f };
float[] mat_specular ={0.316228f, 0.316228f, 0.316228f, 0.95f };
float shine = 12.8f;
```



```
//Obsidian
float[] mat_ambient ={ 0.05375f, 0.05f, 0.06625f, 0.82f };
float[] mat_diffuse ={ 0.18275f, 0.17f, 0.22525f, 0.82f};
float[] mat_specular ={0.332741f, 0.328634f, 0.346435f, 0.82f };
float shine =38.4f ;
```



```
//Perl
float[] mat_ambient ={ 0.25f, 0.20725f, 0.20725f, 0.922f };
float[] mat_diffuse ={1.0f, 0.829f, 0.829f, 0.922f };
float[] mat_specular ={0.296648f, 0.296648f, 0.296648f, 0.922f };
float shine = 11.264f;
```



```
//Ruby
float[] mat_ambient ={ 0.1745f, 0.01175f, 0.01175f, 0.55f };
float[] mat_diffuse ={0.61424f, 0.04136f, 0.04136f, 0.55f };
float[] mat_specular ={0.727811f, 0.626959f, 0.626959f, 0.55f };
float shine =76.8f ;
```



```
//Turquoise
float[] mat_ambient ={ 0.1f, 0.18725f, 0.1745f, 0.8f };
float[] mat_diffuse ={0.396f, 0.74151f, 0.69102f, 0.8f };
float[] mat_specular ={0.297254f, 0.30829f, 0.306678f, 0.8f };
float shine = 12.8f;
```



```
//Black plastic
float[] mat_ambient ={0.0f, 0.0f, 0.0f, 1.0 f };
float[] mat_diffuse ={0.01f, 0.01f, 0.01f, 1.0f };
float[] mat_specular ={0.50f, 0.50f, 0.50f, 1.0f };
float shine =32.0f ;
```



```
//Cyan plastic
float[] mat_ambient ={ 0.0f,0.1f,0.06f ,1.0f};
float[] mat_diffuse ={ 0.0f,0.50980392f,0.50980392f,1.0f};
float[] mat_specular ={0.50196078f,0.50196078f,0.50196078f,1.0f };
float shine =32.0f ;
```



```
//Green plastic
float[] mat_ambient ={ 0.0f,0.0f,0.0f,1.0f };
float[] mat_diffuse ={ 0.1f,0.35f,0.1f,1.0f};
float[] mat_specular ={0.45f,0.55f,0.45f,1.0f };
float shine = 32.0f ;
```



```
//Red plastic
float[] mat_ambient ={ 0.0f,0.0f,0.0f,1.0f };
float[] mat_diffuse ={ 0.5f,0.0f,0.0f,1.0f};
float[] mat_specular ={0.7f,0.6f,0.6f,1.0f };
float shine =32.0f ;
```



```
//White plastic
float[] mat_ambient ={ 0.0f,0.0f,0.0f,1.0f };
float[] mat_diffuse  ={ 0.55f,0.55f,0.55f,1.0f};
float[] mat_specular ={0.70f,0.70f,0.70f,1.0f };
float shine = 32.0f ;
```



```
//Yellow plastic
float[] mat_ambient ={0.0f,0.0f,0.0f,1.0f };
float[] mat_diffuse  ={0.5f,0.5f,0.0f,1.0f };
float[] mat_specular ={0.60f,0.60f,0.50f,1.0f };
float shine = 32.0f ;
```



```
//Black rubber
float[] mat_ambient ={ 0.02f, 0.02f, 0.02f, 1.0f };
float[] mat_diffuse  ={ 0.01f, 0.01f, 0.01f, 1.0f};
float[] mat_specular ={0.4f, 0.4f, 0.4f, 1.0f };
float shine = 10.0f;
```



```
//Cyan rubber
float[] mat_ambient ={ 0.0f,0.05f,0.05f,1.0f };
float[] mat_diffuse  ={0.4f,0.5f,0.5f,1.0f };
float[] mat_specular ={0.04f,0.7f,0.7f,1.0f };
float shine = 10.0f;
```



```
//Green rubber
float[] mat_ambient ={ 0.0f,0.05f,0.0f,1.0f };
float[] mat_diffuse  ={ 0.4f,0.5f,0.4f,1.0f};
float[] mat_specular ={0.04f,0.7f,0.04f,1.0f };
float shine = 10.0f;
```



```
//Red rubber
float[] mat_ambient ={ 0.05f,0.0f,0.0f,1.0f };
float[] mat_diffuse  ={ 0.5f,0.4f,0.4f,1.0f};
float[] mat_specular ={ 0.7f,0.04f,0.04f,1.0f};
float shine = 10.0f;
```



```
//White rubber
float[] mat_ambient ={ 0.05f,0.05f,0.05f,1.0f };
float[] mat_diffuse  ={ 0.5f,0.5f,0.5f,1.0f};
float[] mat_specular ={ 0.7f,0.7f,0.7f,1.0f};
float shine = 10.0f;
```



```
//Yellow rubber
float[] mat_ambient ={ 0.05f,0.05f,0.0f,1.0f };
float[] mat_diffuse  ={0.5f,0.5f,0.4f,1.0f};
float[] mat_specular ={0.7f,0.7f,0.04f,1.0f };
float shine = 10.0f;
```

The light on teapots [\[3\]](#) are set as:

```
// set up light
float[] ambient = { 0.2f, 0.2f, 0.2f, 1.0f };
float[] diffuse = { 1.0f, 1.0f, 1.0f, 1.0f };
float[] specular = { 1.0f, 1.0f, 1.0f, 1.0f };
float[] position = { 200.0f, 300.0f, 100.0f, 0.0f };

glLightfv(GL_LIGHT0, GL_AMBIENT, ambient);
glLightfv(GL_LIGHT0, GL_DIFFUSE, diffuse);
glLightfv(GL_LIGHT0, GL_SPECULAR, specular);
glLightfv(GL_LIGHT0, GL_POSITION, position);
glEnable(GL_LIGHT0);
glEnable(GL_LIGHTING);
```

A class

A class is available for setting any of the materials above, and a few more.

`_stdMaterials.java`

References

1. OpenGL materials mecadserv1.technion.ac.il/public_html/LabCourses/interActiveGraphics/ogl_course/ogl_LAB/OpenGLmat.pdf 14-03-2009
 2. Material Type Settings for OpenGL www.cs.utk.edu/~kuck/materials_ogl.htm 14-03-2009
 3. The Utah Teapot www.sjbaker.org/wiki/index.php?title=The_History_of_The_Teapot 14-03-2009
- A program demonstrating materials: <https://svn.hiof.no/svn/psource/JOGL/mat>

([Welcome](#)) ([Material Editor](#))