

## **Face Plate for a Cell Phone:**

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### **BACKGROUND**

Cell phones are widely used. Lots of people, from young to old, carry cell phone in their pockets or handbags. New models have also been invented to meet the criteria of the user. People choose their cell phones based on the performance, the size, or the price of the cell phone. A cheap cell phone does not mean that it is not “cool” to be carried around, and the opposite is also true. The “coolness” of the cell phone for young users often depends on the faceplate itself. This project is to choose the possible material for the cell phone face place using the CES software for material selection.

### **OBJECTIVE**

The objectives for the face plate are

- It has to be light.

This is because if the cell phone is not light weight, there is a possibility that people will not carry the cell phone with them. Also, the cell phone companies nowadays are competing in making the lightest cell phone.

- It has to be cheap.

The reason for this criterion is that when the face plate is expensive, people are not going to buy it. Therefore, there is no point of making the face plate if there is no one buying it.

- It has to be colorful

The colorful face plate attracts people and makes the phone distinctive. The more attractive the face plate is, the greater the number of people that are going to buy.

These criteria above are already met by current face plates. The current problem, however, is that the face plates used nowadays are very brittle. They can easily break when the cell phone drops. Using CES software, the objective of this project is to choose the appropriate material that might be used for the next generation of face plate.

## **REQUIREMENTS**

The requirements are relate directly from the material selection objectives. They are supplied for the student's use in completing this material selection project. The requirements are as follows:

- Light
- Cheap
- Wear resistance
- Colorful
- Not brittle

CES Selector properties to use:

### Limit stage

- Thermal Properties - Good Insulator
- Electrical Properties - Good Insulator
- Environmental resistance – Good wear resistance

### Graph Stage

- Price (USD\$/lb) vs. Density (lb/ft<sup>3</sup>)
- Electrical conductor/insulator vs. Minimum service temperature (°F)

The resulting potential materials using these criteria and this approach are either isoprene or natural rubber.