

Pink Tolt

ALMA 4000

SN 1912296

Question 4

- a) • Needs to be ~~be~~ corrosion resistant
- Needs to be machinable to machine a thread for a valve or pressure regulator
 - Needs to withstand the pressure of the oxygen inside the tank
 - Needs to be castable to get the rough shape of the oxygen tank
 - ~~Needs to be~~ Buoyancy of the material has to be lower than water.
 - Density

b) If I were to choose a material from the 4 given. I would first look if it they can withstand the pressure of 20MPa, which call for of the material can. Then I would look at corrosion resistance and determine if the material would rust which could affect the properties of the material.

from the four materials below, a steel alloy (202) isn't corrosion resistant therefore removing it from my choice pool. Aluminum ~~can also~~ does react with oxygen creating aluminum oxide which is ~~a~~ like a thin shell that protects it from further reactions.

Thirdly I would go by density to keep the size or weight of the cylinder to minimum.

Aluminum has the lowest density at $2.7g/cm^3$ for comparison and carbon fibre breaking it at $1.74g/cm^3$