附件5：TOPSIS具体数据

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Material | Density, r (lb/in3 ) | Elastic Modulus, E (psi)\*10^6 | Yield Strength, sy (ksi) | Tensile Strength, su (ksi) | Potential in Seawater, ref. Ag-AgCl (V) | 最终得分 |
| Aluminum alloy 5052 | 0.097 | 10 | 31 | 38 | -0.92 | -3.805270558 |
| Aluminum alloy 6061 | 0.098 | 10 | 40 | 45 | -0.72 | -2.811109912 |
| Aluminum alloy 7075 | 0.101 | 10.4 | 73 | 83 | -0.72 | -1.571584296 |
| Copper | 0.322 | 17 | 50 | 55 | -0.12 | -2.68575563 |
| Beryllium-Copper, CDA 172 | 0.298 | 18 | 170 | 200 | -0.1 | 2.483721606 |
| Red Brass, CDA 230 | 0.316 | 17 | 49 | 65 | -0.2 | -2.730044745 |
| Inhibited Admiralty Brass | 0.308 | 16 | 72 | 92 | -0.16 | -1.742213796 |
| Naval Brass | 0.304 | 15 | 66 | 88 | -0.2 | -2.146004872 |
| Aluminum Bronze D, CDA 614 | 0.281 | 18 | 47 | 80 | -0.09 | -1.415984801 |
| High Silicon Bronze A, CDA 655 | 0.308 | 15 | 51 | 88 | -0.17 | -2.354770974 |
| 90-10 Copper-Nickel | 0.323 | 18 | 57 | 60 | -0.15 | -2.457980327 |
| 70-30 Copper-Nickel | 0.323 | 22 | 79 | 85 | -0.17 | -1.134639666 |
| Cast Silicon Brass and Bronze | 0.302 | 17.5 | 28 | 63 | -0.27 | -3.093506208 |
| Cast Aluminum Bronze | 0.276 | 17 | 60 | 102 | -0.3 | -1.649489588 |
| Monel 400 | 0.319 | 26 | 110 | 120 | -0.08 | 0.981894491 |
| **Inconel 625** | **0.305** | **29.8** | **201** | **219** | **0.02** | **5.402276368** |
| Incoloy 825 | 0.294 | 28 | 40 | 93 | 0.01 | 0.317862374 |
| Ductile Cast Iron | 0.257 | 24 | 95 | 117 | -0.65 | -0.756917537 |
| AISI 1040 Steel | 0.283 | 30 | 86 | 113 | -0.65 | -0.503990788 |
| AISI 1040 Steel | 0.283 | 30 | 142 | 190 | -0.65 | 1.796282737 |
| HY-80 Steel | 0.284 | 30 | 90 | 103 | -0.63 | -0.551403028 |
| HY-100 Steel | 0.284 | 30 | 103 | 114 | -0.63 | -0.137028833 |
| Low Alloy-High Strength Steels (ASTM A-242 and A-441) | 0.283 | 30 | 50 | 70 | -0.6 | -1.68630401 |
| **Maraging 300 Steel** | **0.29** | **29** | **300** | **302** | **-0.57** | **6.494769768** |
| Unalloyed Titanium | 0.163 | 15 | 90 | 100 | 0 | 1.374963764 |
| Titanium 6Al-4V | 0.16 | 16.5 | 155 | 170 | 0 | 3.973057305 |
| 302 Stainless Steel | 0.29 | 28 | 75 | 125 | 0 | 1.499786383 |
| 303 Stainless Steel | 0.29 | 28 | 75 | 110 | -0.06 | 1.018792995 |
| 304 Stainless Steel | 0.29 | 28 | 75 | 110 | -0.12 | 0.798784055 |
| 316 Stainless Steel | 0.29 | 28 | 36 | 85 | -0.07 | -0.121806042 |
| **17-4 PH Stainless Steel** | **0.281** | **28.5** | **181** | **200** | **-0.15** | **4.28424825** |
| 410 Stainless Steel | 0.28 | 29 | 142 | 185 | -0.29 | 2.929365516 |