RADIOACTIVE

Actinide base; singly or in combination

Uranium base

Iron base

Magnesium base

Nickel or cobalt base

Aluminum base

FERROUS (I.E., IRON BASE)

1.7 percent or more carbon containing

Six percent or more total group IV, V, or VI transition metals containing

Eight percent or more chromium containing

Molybdenum, tungsten or vanadium containing

2.7 percent or more carbon equivalent containing (i.e., cast iron)

Boron containing

Chromium containing

Nickel containing

Molybdenum containing

Processes of adding magnesium

Adding magnesium as a liquid, vapor or as a solid agent entrained by gas (e.g., fluidized)

Flowing molten iron alloy onto solid magnesium containing agent, or adding solid magnesium containing agent to molten stream of iron alloy

Mechanically plunging magnesium containing agent below surface of iron alloy melt

Separate addition of plural agents, at least one containing magnesium

Magnesium containing agent is coated, impregnated, or compacted (e.g., briquetted, coated particles)

Magnesium present in agent only as a compound with a nonmetal

In agent also containing silicon, rare earth, or alkaline earth metal

Copper containing

Nickel or molybdenum containing

Over .1 percent aluminum containing

Processes

Adding rare earth or alkaline earth metal

Adding sulfur, selenium or tellurium

Adding vanadium, titanium, niobium, or zirconium

Adding silicon

Nine percent or more chromium containing

Noble metal containing

Cobalt containing

Molybdenum or tungsten containing

Nickel containing

Copper containing

Rare earth containing

Lead, bismuth, antimony, calcium, selenium or tellurium containing

Over 0.05 percent sulfur, over 0.04 percent phosphorus or sulfur or phosphorus added in any amount to promote machinability

Eight percent or more nickel containing

Over 2 percent manganese containing

Copper containing

Molybdenum or tungsten containing

Group IV or V transition metal containing

Group IV or V transition metal containing

Copper containing

Over 1.5 percent silicon containing

Group IV or V transition metal containing

Molybdenum containing

Group IV or V transition metal containing

Group IV or V transition metal containing

Over 0.1 percent carbon containing
CLASS 420 ALLOYS OR METALLIC COMPOSITIONS

56. Eight percent or more total nickel plus manganese containing
57. Molybdenum or tungsten containing
58. Copper containing
59. Over 0.20 percent nitrogen containing
60. Copper containing
61. Molybdenum or tungsten containing
62. Over 0.1 percent aluminum containing
63. Molybdenum or tungsten containing
64. Boron containing
65. 0.25 percent or more nitrogen containing
66. Group IV or V transition metal containing
67. Molybdenum or tungsten containing
68. Titanium, zirconium or hafnium containing
69. Vanadium, niobium or tantalum containing
70. Group IV or V transition metal containing
71. Processes
72. Eight percent or more manganese containing
73. Nickel containing
74. Chromium containing
75. Titanium containing
76. Copper containing
77. Four percent or more aluminum containing
78. Over 2 percent silicon containing
79. Chromium containing
80. Nickel or cobalt containing
81. Zirconium, vanadium or titanium containing
82. Noble metal containing
83. Rare earth metal containing
84. Lead, bismuth, selenium, tellurium or calcium containing
85. Processes
86. Adding lead
87. Over 0.05 percent sulfur, over 0.04 percent phosphorus or sulfur or phosphorus added in any amount to promote machinability
88. Processes of making or treating alloy containing over 0.04 percent phosphorus
89. Copper containing
90. Chromium containing
91. Nickel containing
92. Nickel containing
93. Vanadium, zirconium, titanium or molybdenum containing
94. Over 10 percent nickel containing
95. Cobalt containing
96. Molybdenum containing
97. Chromium containing
98. Over 1 percent silicon containing
99. One percent or more carbon containing, but less than 1.7 percent
100. Chromium containing
101. Molybdenum containing
102. Cobalt containing
103. Over 0.1 percent aluminum containing, but less than 4 percent
104. Chromium containing, but less than 9 percent
105. Molybdenum containing
106. Boron or beryllium containing
107. Cobalt containing
108. Nickel containing
109. Vanadium, titanium or zirconium containing
110. Titanium, zirconium or niobium containing
111. Vanadium containing
112. Nickel containing
113. Tungsten containing
114. Tungsten containing
115. Processes
116. Including reducing a chromium compound
117. Two percent or more silicon containing
118. Titanium, molybdenum, tungsten or vanadium containing
119. Nickel containing, but 10 percent or less
.1.5 percent or more manganese containing, but less than 8 percent
.1.5 percent or more manganese containing, but less than 8 percent
Boron containing
Tungsten containing
Molybdenum containing
Vanadium, tantalum or titanium containing
Zirconium containing
Titanium containing
Vanadium, tantalum or niobium containing
Nitrogen containing
Processes
ALKALI METAL BASE
BERYLLIUM BASE
MAGNESIUM BASE
Silver containing
Manganese containing
Lanthanide containing
Zirconium containing
Aluminum containing
Zinc containing
Manganese containing
ALKALINE EARTH METAL BASE
RARE EARTH METAL BASE SINGLY OR IN COMBINATION
TITANIUM BASE
Aluminum containing
Tin containing
Vanadium containing
Chromium or molybdenum containing
ZIRCONIUM OR HAFNIUM BASE
Copper containing
Vanadium or molybdenum containing
NIQUE LEAD BASE
.Titanium containing
.Zirconium or boron containing
.Titanium containing
.Molybdenum or tungsten containing
.Rare earth, magnesia or alkaline earth metal containing
.Noble metal containing
.Aluminum containing
.Titanium containing
.Cobalt containing
.Rare earth containing
.Noble metal containing
.Platinum containing
.PALLADIUM BASE
.Copper containing
.Platinum containing
.COPPER BASE
.Tin containing
.Aluminum containing
.Phosphorus containing
.Iron, manganese or nickel containing
.Iron containing
.Manganese containing
Aluminum containing
.Titanium containing
.Zinc containing
.Manganese containing
.Iron containing
.Manganese containing
Noble metal containing
.Aluminum containing
.Nickel containing
.Molybdenum containing
.Titanium containing
.Tungsten containing
Carbon, boron or nitrogen containing
.Rhenium or noble metal containing
.Rhenium base
.Manganese containing
.Iron containing
.Nickel containing
October 2007
<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>482</td>
<td>Manganese containing</td>
</tr>
<tr>
<td>483</td>
<td>Noble metal containing</td>
</tr>
<tr>
<td>484</td>
<td>Refractory metal containing</td>
</tr>
<tr>
<td>488</td>
<td>Refractory metal containing</td>
</tr>
<tr>
<td>489</td>
<td>Aluminum, gallium, indium, or thallium containing</td>
</tr>
<tr>
<td>490</td>
<td>Silicon containing</td>
</tr>
<tr>
<td>491</td>
<td>Lead containing</td>
</tr>
<tr>
<td>492</td>
<td>Titanium, zirconium or hafnium containing</td>
</tr>
<tr>
<td>493</td>
<td>Manganese containing</td>
</tr>
<tr>
<td>494</td>
<td>Beryllium, magnesium, or alkaline earth metal containing</td>
</tr>
<tr>
<td>495</td>
<td>Other refractory metal containing</td>
</tr>
<tr>
<td>496</td>
<td>Iron or cobalt containing</td>
</tr>
<tr>
<td>497</td>
<td>Noble metal containing</td>
</tr>
<tr>
<td>498</td>
<td>Cadmium, or mercury containing</td>
</tr>
<tr>
<td>499</td>
<td>Phosphorus, arsenic, antimony, or bismuth containing</td>
</tr>
<tr>
<td>500</td>
<td>Sulfur, selenium, or tellurium containing</td>
</tr>
<tr>
<td>501</td>
<td>SILVER BASE</td>
</tr>
<tr>
<td>502</td>
<td>Copper containing</td>
</tr>
<tr>
<td>503</td>
<td>Other noble metal containing</td>
</tr>
<tr>
<td>504</td>
<td>Zinc, or cadmium containing</td>
</tr>
<tr>
<td>505</td>
<td>Other noble metal containing</td>
</tr>
<tr>
<td>506</td>
<td>Zinc, or cadmium containing</td>
</tr>
<tr>
<td>507</td>
<td>GOLD BASE</td>
</tr>
<tr>
<td>508</td>
<td>Palladium containing</td>
</tr>
<tr>
<td>509</td>
<td>Platinum containing</td>
</tr>
<tr>
<td>510</td>
<td>Platinum containing</td>
</tr>
<tr>
<td>511</td>
<td>Silver containing</td>
</tr>
<tr>
<td>512</td>
<td>Iron, cobalt, or nickel containing</td>
</tr>
<tr>
<td>513</td>
<td>ZINC BASE</td>
</tr>
<tr>
<td>514</td>
<td>Aluminum containing</td>
</tr>
<tr>
<td>515</td>
<td>Copper containing</td>
</tr>
<tr>
<td>516</td>
<td>Magnesium containing</td>
</tr>
<tr>
<td>517</td>
<td>Tin containing</td>
</tr>
<tr>
<td>518</td>
<td>Manganese, iron, cobalt, or nickel containing</td>
</tr>
<tr>
<td>519</td>
<td>Magnesium containing</td>
</tr>
<tr>
<td>520</td>
<td>Manganese, iron, cobalt, or nickel containing</td>
</tr>
<tr>
<td>521</td>
<td>Copper containing</td>
</tr>
<tr>
<td>522</td>
<td>Manganese, iron, cobalt, or nickel containing</td>
</tr>
<tr>
<td>523</td>
<td>Cadmium containing</td>
</tr>
<tr>
<td>524</td>
<td>Tin containing</td>
</tr>
</tbody>
</table>

**CLASS 420 ALLOYS OR METALLIC COMPOSITIONS**

- **MAGNESIUM BASE**
- **NICKEL BASE**
- **IRON BASE**
- **CIROSE BASE**
- **ZINC BASE**
- **CADMIUM BASE**
- **MERCURY BASE**
- **SILVER BASE**
- **COPPER BASE**
- **TIN BASE**
- **LEAD BASE**
- **GALLIUM, INDIUM, OR THALLIUM BASE**
- **GERMANIUM BASE**

October 2007
565 Tin containing
566 Silver containing
567 Arsenic containing
568 Tin containing
569 ...Antimony containing
570 Tin containing
571 ...Antimony containing
572 Antimony containing
573 Copper containing
574 Zinc containing
575 Cadmium containing
576 ANTIMONY BASE
577 BISMUTH BASE
578 SILICON BASE ALLOY CONTAINING METAL
579 ARSENIC BASE OR SELENIUM OR TELLURIUM BASE ALLOY CONTAINING METAL
580 CONTAINING OVER 50 PER CENT METAL BUT NO BASE METAL
581 Iron containing
582 Copper containing
583 Chromium containing
584.1 ...Nickel containing
585 ...Cobalt containing
586 ....Titanium, or zirconium containing
586.1 ....Molybdenum containing
587 Copper containing
588 Chromium containing
589 Tin containing
590 PROCESSES
591 MISCELLANEOUS

CROSS-REFERENCE ART COLLECTIONS

900 HYDROGEN STORAGE
901 SUPERCONDUCTIVE
902 SUPERPLASTIC
903 SEMICONDUCTIVE

FOREIGN ART COLLECTIONS

FOR 000 CLASS-RELATED FOREIGN DOCUMENTS