CLAIMS

1. A metal article comprising a consolidated sodium/molybdenum composite metal powder formed by compacting the sodium/molybdenum composite metal powder under sufficient pressure to form a preformed article; placing the preformed article in a sealed container; raising the temperature of the sealed container to a temperature that is lower than the melting point of sodium molybdate; and subjecting the sealed container to an isostatic pressure for a time sufficient to increase the density of said metal article to at least about 90% of theoretical density.

2. The metal article of claim 1, wherein said metal article comprises at least about 2.5% by weight sodium.

3. The metal article of claim 2, wherein said metal article comprises an iron content of less than about 50 parts per million by weight.

4. The metal article of claim 3, wherein said metal article comprises less than about 6% by weight retained oxygen.

5. A metal article comprising a consolidated sodium/molybdenum composite metal powder, said sodium/molybdenum composite metal powder comprising a ~~substantially~~ homogeneous dispersion of molybdenum and sodium molybdate sub-particles that are fused together to form individual particles of said composite metal powder, said metal article comprising from about 0.2% by weight to about 3.5% by weight retained sodium, said metal article comprising less than about 6% by weight retained oxygen, said metal article having an apparent density of at least about 90%.

6. The metal article of claim 5, wherein said metal article comprises at least about 2.5% by weight retained sodium.

7. The metal article of claim 5, wherein the metal article is ~~substantially~~ chemically homogeneous with respect to sodium, oxygen, and molybdenum.

8. The metal article of claim 5, wherein the metal article is ~~substantially~~ physically homogeneous with respect to hardness.

9. The metal article of claim 5, having a purity of greater than about 99.9%, excluding gases and sodium, as determined by GDMS.

10. The metal article of claim 5, wherein the metal article is ~~substantially~~ free of localized inhomogeneities having elevated levels of oxygen and carbon.

11. The metal article of claim 5, wherein said metal article comprises a sputter target.

12. The metal article of claim 5, wherein said metal article comprises less than about 50 parts per million by weight iron.

13. A metal article comprising a consolidated sodium/molybdenum composite metal powder, said composite metal powder comprising a ~~substantially~~ homogeneous dispersion of molybdenum and sodium molybdate, the sodium molybdate comprising said composite metal powder being present in an amount sufficient so that said metal article comprises at

least about 2.5% by weight retained sodium and less than about 6% by weight retained oxygen, said metal article having an apparent density of at least about 95%.

14. The metal article of claim 13, wherein the metal article is ~~substantially~~ chemically homogeneous with respect to sodium, oxygen, and molybdenum.

15. The metal article of claim 13, wherein the metal article is ~~substantially~~ physically homogeneous with respect to hardness.

16. The metal article of claim 13, having a purity of greater than about 99.9%, excluding gases and sodium, as determined by GDMS.

17. The metal article of claim 13, wherein said metal article comprises less than about 5% by weight retained oxygen.

18. The metal article of claim 13, wherein the metal article is ~~substantially~~ free of localized inhomogeneities having elevated levels of oxygen and carbon.

19. The metal article of claim 13, wherein said metal article comprises a sputter target.

20. The metal article of claim 13, wherein said metal article comprises less than about 50 parts per million by weight iron.

21. A metal article comprising molybdenum and sodium, said sodium being present in an amount of at least about 2.5% by weight, said metal article having an apparent density of at

least about 90%, said metal article comprising less than about 50 parts per million by weight iron.

CLAIMS

1. A metal article comprising a consolidated sodium/molybdenum composite metal powder formed by compacting the sodium/molybdenum composite metal powder under sufficient pressure to form a preformed article; placing the preformed article in a sealed container; raising the temperature of the sealed container to a temperature that is lower than the melting point of sodium molybdate; and subjecting the sealed container to an isostatic pressure for a time sufficient to increase the density of said metal article to at least about 90% of theoretical density.

2. The metal article of claim 1, wherein said metal article comprises at least about 2.5% by weight sodium.

3. The metal article of claim 2, wherein said metal article comprises an iron content of less than about 50 parts per million by weight.

4. The metal article of claim 3, wherein said metal article comprises less than about 6% by weight retained oxygen.

5. A metal article comprising a consolidated sodium/molybdenum composite metal powder, said sodium/molybdenum composite metal powder comprising a homogeneous dispersion of molybdenum and sodium molybdate sub-particles that are fused together to form individual particles of said composite metal powder, said metal article comprising from about 0.2% by weight to about 3.5% by weight retained sodium, said metal article comprising less than about 6% by weight retained oxygen, said metal article having an apparent density of at least about 90%.

6. The metal article of claim 5, wherein said metal article comprises at least about 2.5% by weight retained sodium.

7. The metal article of claim 5, wherein the metal article is chemically homogeneous with respect to sodium, oxygen, and molybdenum.

8. The metal article of claim 5, wherein the metal article is physically homogeneous with respect to hardness.

9. The metal article of claim 5, having a purity of greater than about 99.9%, excluding gases and sodium, as determined by GDMS.

10. The metal article of claim 5, wherein the metal article is free of localized inhomogeneities having elevated levels of oxygen and carbon.

11. The metal article of claim 5, wherein said metal article comprises a sputter target.

12. The metal article of claim 5, wherein said metal article comprises less than about 50 parts per million by weight iron.

13. A metal article comprising a consolidated sodium/molybdenum composite metal powder, said composite metal powder comprising a homogeneous dispersion of molybdenum and sodium molybdate, the sodium molybdate comprising said composite metal powder being present in an amount sufficient so that said metal article comprises at least about 2.5% by weight retained sodium and less than about 6% by weight

retained oxygen, said metal article having an apparent density of at least about 95%.

14. The metal article of claim 13, wherein the metal article is chemically homogeneous with respect to sodium, oxygen, and molybdenum.

15. The metal article of claim 13, wherein the metal article is physically homogeneous with respect to hardness.

16. The metal article of claim 13, having a purity of greater than about 99.9%, excluding gases and sodium, as determined by GDMS.

17. The metal article of claim 13, wherein said metal article comprises less than about 5% by weight retained oxygen.

18. The metal article of claim 13, wherein the metal article is free of localized inhomogeneities having elevated levels of oxygen and carbon.

19. The metal article of claim 13, wherein said metal article comprises a sputter target.

20. The metal article of claim 13, wherein said metal article comprises less than about 50 parts per million by weight iron.

21. A metal article comprising molybdenum and sodium, said sodium being present in an amount of at least about 2.5% by weight, said metal article having an apparent density of at least about 90%, said metal article comprising less than about

50 parts per million by weight iron.