The effectiveness of cerium in preventing burn-out of magnesium is illustrated by the following tests. A magnesium-containing aluminum-base alloy, specifically a No. 220 alloy containing about 10% magnesium, was melted and maintained at various temperatures between 1950° and 2500° F. These temperatures far exceeded the normal casting temperature for this alloy. Cerium was added to the aluminum-magnesium alloy batches in the form of aluminum-base master alloys containing 5% and 10% cerium and 12½% and 25% mischmetall. In each test, a flame of burning magnesium was present at the surface of the molten aluminum-magnesium alloy before the cerium addition and this flame was promptly extinguished by additions of the aforementioned master alloys in amounts sufficient to establish a cerium content between 0.0008% and 0.07% by weight in the aluminum-magnesium alloy. It will be readily appreciated that these tests were conducted under extremely severe temperature conditions and that they therefore establish the outstanding effectiveness of the practice of the invention in preventing magnesium burn-out in molten aluminum-magnesium alloys.

I claim:

1. The method of substantially preventing burn-out of magnesium added to molten aluminum in the production of an aluminum-base alloy containing about 10% by weight of magnesium which comprises incorporating in the molten aluminum an amount of cerium sufficient to introduce between about 0.0001% and 0.07% by weight of cerium into the molten aluminum.

2. The method of substantially preventing burn-out of magnesium added to molten aluminum in the production of an aluminum-base alloy containing at least 1% by weight of magnesium which comprises incorporating in the molten aluminum an amount of cerium sufficient to introduce between about 0.0001% and 0.1% by weight of cerium into the molten aluminum.

3. The method of substantially preventing burn-out of magnesium added to molten aluminum in the production of an aluminum-base alloy containing at least 1% by weight of magnesium which comprises incorporating in the molten aluminum a master alloy of aluminum and cerium in amount sufficient to introduce at least about 0.0001% by weight of cerium into the molten aluminum.

4. The method of substantially preventing burn-out of magnesium added to molten aluminum in the production of an aluminum-base alloy containing at least 1% by weight of magnesium which comprises incorporating in the molten aluminum a master alloy of aluminum and cerium in amount sufficient to introduce between about 0.0001% and 0.1% by weight of cerium into the molten aluminum.

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