

Japan Magnesium Market Outlook

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Abstract:

The Macro economy transition of Japan in 2015 had been going on rather upward tendency. It was supported by weak Yen rate, low resources price (including Petroleum & Natural gas) and also the agreement on TPP. Because Prime Minister Mr.Abe's government is expected to keep its stability, we expect rather firm financial conditions maintenance in coming couple of years.

The demand for Magnesium from each usage was generally stable, total approx.43,500t of annual consumption was no change. JMA members much expect the increase of demand for Die-casting Magnesium alloy parts for Automobiles. JMA is planning to accurate this activity till 2018. Also, except Automobile parts, JMA members develop several unique items from Magnesium metal.

For the purpose of the expanding Magnesium alloy consumption & developing various items, we need to solve 5 big problems. We consider Establishing recycling system for Magnesium alloy scrap to be the most important & should be settled ASAP.

Introduction:

The Macro economy transition of Japan in 2015 had been going on rather upward tendency. It was supported by weak Yen rate, low resources price (including Petroleum & Natural gas) and also the agreement on TPP. Because Prime Minister Mr.Abe's government is expected to keep its stability, we expect rather firm financial conditions maintenance in coming couple of years.

The total import of Magnesium metal related items in Japan is reported as 38,600t in 2015, its 97% is coming from China.

We estimate Domestic recycling for Magnesium alloy to be approx..4500-5000t, so the total consumption in Japan can be calculated into approx.43,500t in 2015.

This is 4-5% of the global market. As for its usage, for Aluminum alloy additive shares 52%, the products of Magnesium alloy is 17.5%. 13.7% is consumed as Desulfurization flux in the Steel works.

- 1) Aluminum alloy
- 2) Titanium
- 3) Nodular
- 4) Anodes
- 5) Chemical
- 6) Steel desulfurization
- 7) Magnesium alloy products

JMA members keeps efforts expanding Magnesium metal market in Japan:

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Current barriers against us are as follows;

- 1) Low LCA competitive powder of Pigeon Magnesium metal against Aluminum.
- 2) Stability of Magnesium alloy's raw material supply
- 3) Unimproved recycling system for Scrap

Unique items developed by JMA members

Also, except Automobile parts, JMA members develop several unique items from Magnesium metal.

5 big problems existing in Japanese magnesium Market:

For the purpose of the expanding Magnesium alloy consumption & developing various items, we need to solve 5 big problems.

- 1) Recycle
- 2) LCA
- 3) Supply stability
- 4) Compete powder with other high strength-to-ratio materials & development of compound materials
- 5) Various specification of Mg alloys

We consider Establishing recycling system

for Magnesium alloy scrap to be the most important & should be settled ASAP.

We need the recycling system including below listed points is necessary for the further development of the Magnesium alloy market in Japan.

1. Sorting the Magnesium alloy parts scrap from disused cars by car producers
 - Reasonable collecting system for sorted Mg alloy parts scrap.
 - The purpose is minimizing the refining process.
 - How to recycle the parts with different materials joining.
 - Any people has consist this kind of system in Europe or the US?
2. Low cost recycling system for Scrap occurred from Die-casting & machining process
 - In-house or In-line recycling system for gates & runner scrap.
 - In-house recycling for dirty scrap.
 - How to recycle or reuse for chips & fine power scraps.
 - In Europe & the US, In-line & In-house recycling has been the main stream, yet?
3. Recycling system for Magnesium alloys including Rare Earth elements
 - Is it possible to arrange In-line & In-house recycling system?
 - How to refine the Rare Earth oxide dispersed during re-melting process? Refining should be done with special flux??
 - Should we add Rare Earth elements for compensation of the loss during the refining process?

Conclusion:

1. The Macro economy transition of Japan in 2015 had been going on rather upward tendency.
2. The demand for Magnesium from each usage was generally stable, total approx.43,500t of annual consumption was no change.
3. JMA members much expect the increase of demand for Die-casting

Magnesium alloy parts for Automobiles. JMA is planning to accurate this activity till 2018.

4. Except Automobile parts, JMA members develop several unique items from Magnesium metal.
5. From 5 big problems, we consider establishing recycling system for Magnesium alloy scrap to be the most important & should be settled ASAP.
6. About recycling system, we much welcome any suggestions & advices from you.