

Company: ArcelorMittal S.A
Concerned Sector: ArcelorMittal Flat Carbon Europe
Address: 19, avenue de la Liberté
L – 2930 Luxembourg

***Food Contact Suitability Information within the framework of the Regulation (EC) No 1935/2004:
Steels with Magnelis®
Zinc-aluminium-magnesium coating without any surface treatment, which can be oiled.***

In Europe (except in France): According the Council of Europe, there is no objection to use steel with Magnelis® zinc-aluminium-magnesium coating in contact with foodstuffs, providing these foodstuffs are non-acidic.

According the Council of Europe and the French Guidelines, there is no objection to use steel with Magnelis® zinc-aluminium-magnesium coating in contact with foodstuffs, providing these foodstuffs are dry.

Except specification when offering and ordering, the bands must be delivered oiled. In this case, an operation of degreasing must be carried out at the latest before the delivery of the finished product.

Sources:

- **European Legislation**
 - o Regulation (EC) No 1935/2004
 - o Guidelines of the Council of Europe: Technical document: Guidelines on metals and alloys used in food contact materials and articles (2013).
- **German legislation**
 - o "Lebensmittel-, Bedarfsgegenstände und Futtermittelgesetz" (Consumer Goods Law, LMBG)
- **French legislation**
 - o Material Sheets edited by the DGCCRF¹: Metallic coated Steel and Stainless Steel (non packaging). Maximum Content in the metallic coating: Lead ≤ 0.050%, Cadmium ≤ 0.010 %, Arsenic ≤ 0.030%.
 - The principal examples of application are as follow:
 - Kitchen utensils: Interior of spit-roasters, plates with pastry makings, lick-chips, vapour barrier of fryers, etc;
 - Equipment of the food industry: Cisterns, silos with grains, etc.
 - o French standard NF A 36-712-1 edited by the French "Bureau de Normalisation de l'Acier: BNAcier": Steels other than packaging steels – Flat steel products intended to come into contact with foodstuffs, products and beverages for consumption by man and animals – Steels (non-stainless) coated with zinc or a zinc alloy.
 - o French standard NF A 36-712-2 edited by the French "Bureau de Normalisation de l'Acier: BNAcier": Steels other than packaging steels – Flat steel products intended to come into contact with foodstuffs, products and beverages for consumption by man and animals – Steels (non-stainless) coated with aluminium or an aluminium-silicon alloy.

¹ Direction Générale de la Concurrence, de la Consommation et de la Répression des Fraudes - French equivalent to the US Food and Drug Administration

- Use restrictions:
 - It is forbidden to put articles made of zinc coated steels in direct contact with drinks and foods, except for:
 - Manufacturing or conservation operations of chocolate or confectionery products not containing liquid acid substances
 - Operations of distilling
 - The roots, tubers, bulbs, fruits with dry envelope, grains, dry vegetables and vegetables with leaf.
 - The coatings containing quasi-crystals.

Migration tests on the final product, performed by French laboratories (LNE)

- **Global**

The tests results in media simulating the fat (sunflower oil, 1 hour at 175°C) contact are lower than the limit of Global Migration of 10mg/dm² (= 60 mg/kg) fixed by the regulation, showing inertia of the steel with Magnelis® zinc-aluminium-magnesium coating.

- **Specific Migration** tests on iron, zinc, magnesium and aluminium

- Aqueous contact (10 % ethanol)
 - Short term and repeated test (1hour at 100°C repeated 3 times): iron, zinc, magnesium and aluminium migrations are very low.
- Fat contact (1 hour at 175°C)
 - Iron, zinc, magnesium and aluminium migrations are not significant.
- Dry contact (1 month at 23°C in wheat flour repeated 3 times)
 - Iron, zinc, magnesium and aluminium migrations are not significant.

Contacts

ArcelorMittal Corporate Health and Safety	ArcelorMittal Flat Carbon Europe
Xavier Verni E-mail: xavier.verni@arcelormittal.com	Anne GrosPierre E-mail: anne.grosPierre@arcelormittal.com

Eric Pezenec
Corporate Health and Safety – Product Safety
ArcelorMittal