

Response of AMAG (Austria Metall GmbH) to ECHA public consultation regarding Aluminosilicate Refractory Ceramic Fibres (Al-RCF)

The use of Refractory Ceramic Fibers by AMAG (aluminium manufacturing industry)

Introduction

AMAG is Austrias leading manufacturer of aluminium semis and casthouse products for the processing industry. AMAG is a producer of recycled aluminium and of rolled products.

This paper gives an overview of the current use of Aluminosilicate Refractory Ceramic Fibres (Al-RCF) and their available alternatives in the aluminium industry, in the context of the ongoing public consultation started by ECHA on the possible inclusion of this substance in the Annex XIV of the REACH Regulation.

It is worth mentioning that Al-RCF and Zr-RCF have been registered in the same REACH dossier with the same CAS number 142844-00-6.

The use of Refractory Ceramic Fibers in the aluminium industry

RCF are man-made mineral fibers mainly used, either as substances or articles, as insulating material in various high temperature applications, in different shapes and formats, e.g. blanket, modules, board, rope and formed shapes. Their use has positive effects also from an environmental and resource-efficiency perspective, as a good insulation saves energy and reduces combustible consumption, hence CO₂ emissions.

RCF are currently used:

- In the casting process, during the metal transfer and casting operations, in the form of launders, moulds, cone fibers and casting tips thanks to their resistance to melted aluminium.
- In melting and holding furnaces as insulating material, in particular as lining material for furnace walls, roofs and door and in other formats like gaskets, plates and wool.

For the production of secondary aluminium in the melting processes different types of furnaces (closed-well furnace, induction furnace, rotary drum furnace) are used. For lining, insulation and sealing of these furnaces RCF are being used.

For example, the following materials are being used for insulation and sealing for remelting and refining operations (the list is non exhaustive):

- millboard for insulating inductor steel body before ramming,
- ceramic fiber ½" for sealing between Inductor and adapter of the furnace,
- ceramic fiber paper 3 mm for casting units (mold);
- insulmold for finishing the launder,

- sealing 60x70 for the door of the melting furnace, ceramic paper 0,5 and 2,5 mm for insulating a coil of the induction furnace.

Only RCF are suitable for temperatures up to 1250 °C and that is the reason why alternatives are difficult to find. RCF is the material with the highest temperature-, flame- and aluminium-resistance.

These examples show, that RCF are not used as such, but in form of millboard, ceramic fiber paper or similar, which are regarded as articles under REACH Regulation. These articles are all manufactured in the EU.

RCF have been in use in the aluminium industry for a long time, hence the risks associated with their usage in terms of workers' exposure are well known, and appropriate countermeasures are in place in order to minimize the health risk for the employees.

Workers exposed to RCF articles (staff or workers of external contractors) have to comply with a set of strict rules. These include:

- workers protection law (e.g. Chemical Agents Directive, Carcinogens Mutagens Directive)
- internal directives implementing risk management measures (use of protective equipment, undergo trainings, other protective measures, etc.)
- information on safe use provided by suppliers.

In the application of thermal insulation of annealing furnaces with up to 1200°C the RCF is encapsulated inside the furnace walls, therefore usually no worker is exposed, except maintenance personnel, which is protected and trained. Most applications do not require frequent maintenance or intervention, for example the relining of casting furnaces is usually done every 5-7 years, hence the workers' exposure is minimized.

In our view, existing (workers protection) legislation sufficiently copes with the risks of workers being exposed to RCF and there is no need for further regulation.

Available alternatives to RCF

Alternatives to RCF have been tested, although for some applications there is still no valid substitute available due to the high operating temperature (>900 °C) and the need for good resistance to abrasion and chemical attack.

Other fibers like AES (Alkaline Earth Silicate wool) are sometimes already used to replace RCF, although they preferably work at temperatures below 900°C while most applications operate at temperatures around 1200°C.

Socio-Economic Impact

The non-availability of EU manufactured RCF fibres and articles will negatively impact our industry:

- in order to meet energy and resource efficiency targets set out in the EU 2020 programme.

- in terms of global competitiveness of the European industry as a whole

Due to the aluminium industries energy intensiveness, energy cost represent a significant share of total operational costs. The reduction of energy costs is one of the main challenges of our industry sector. RCF are an optimal solution to rationalise energy use. In this way, RCF also contribute to meet CO₂-reduction and energy efficiency objectives set by the EU 2020 programme.

Subjecting RCF fibres to the authorisation requirement under REACH, will negatively impact not only EU manufacturers of RCF fibres and articles, but also downstream users like the non-ferrous metals industry. The reasons are:

- in case EU-manufactured RCF articles are still available on the EU market:
 - higher prices for EU-products
- if EU-manufactured RCF articles disappear from the European market:
 - loss of know-how provided by EU manufacturers, from which downstream users benefit today
 - less product choice
 - higher import-dependence
 - distortions in the supply chain might occur

Therefore AMAG urges regulatory authorities:

- to refrain from prioritising (Zr-) Aluminosilicate RCF for their inclusion in Annex XIV of REACH Regulation and
- to consider other measures than authorisation under REACH (e.g. improve existing risk management tools, for example to provide more quality information on articles down the supply chain) which are more effective to achieve the regulatory goal and less burdensome for industry.

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