

Catalysts Europe view on the 5 cobalt salts restriction proposal:

Cobalt salts are important raw materials in the manufacture of cobalt-containing catalysts which are employed in a vast range of industrial applications including fine chemicals, refinery operations, edible oils, pharmaceuticals and polymers. These catalysts are crucial for innovation to make products greener and more sustainable. Catalysts are substances that increase the rate of chemical reactions which are vital to the chemical industry.

The proposed restriction is both unrealistic and unachievable and poses a severe challenge to the production capability of European catalyst manufacturers. As an alternative to the proposed restriction, Catalysts Europe supports an EU-wide Binding Occupational Exposure Limit (BOEL).

Background

The European Chemicals Agency (ECHA) has submitted a proposal to restrict 5 cobalt salts: cobalt sulphate, cobalt dichloride, cobalt dinitrate, cobalt carbonate and cobalt diacetate. Only cobalt carbonate and cobalt dinitrate are relevant for Catalysts Europe.

The aim of the proposed restriction is *“to decrease the individual excess cancer risk levels and resulting cancer cases arising from occupational exposure to the cobalt salts via inhalation. {...} a reference exposure value of 0.01 µg/m³ is the most appropriate Union-wide measure to ensure a high level of protection of workers from the risk of developing cancer due to exposure to the cobalt salts.”*

Catalysts Europe (CE) Position

- Catalysts Europe considers that the restriction proposal for R01d i.e. implementation of reference exposure value (REV) of 0.01 µg Co/m³, is based on several incorrect assumptions. These assumptions pertain to both the derived toxicity, notably the non-threshold assumption, and the effectiveness of engineering solutions. Adequately sensitive analytical techniques that would allow reliable and accurate measurements at 0.01 µg Co/m³ do not currently exist. In addition, as no proven technology exists to meet this very low level of exposure in the catalyst sector, it is not possible to identify adequate risk management measures (RMMs) to be implemented. This means that the technical feasibility of attaining, measuring and monitoring such a level would be practically impossible.
- R01b is at the lower limit of analytical sensitivity so maybe feasible from a measurement perspective but similarly the RMM improvements needed for the compliance at 1 µg Co/m³ would be extensive and thus highly expensive for companies.
- Like R01d, R01c would also constitute a de facto ban on the use of the cobalt salts for catalyst manufacturing in Europe and adversely affect the competitiveness of the industry in the region. In addition, it is not proven if any specific technical measure will be able to prevent exposure. Even state-of-the-art solutions like the use of downflow booth with separation barriers for the workers will only be able to reduce exposure to <1 µg/m³.



This type of installation is not always feasible in a catalyst production environment due to the scale of the process.

- The RO1a is technically and economically feasible. This is based on measurements of cobalt exposure on sites and analysis of RMMs necessary to achieve the proposed limit.
- With the aim of ensuring regulatory consistency Catalysts Europe believe that an EU-wide Binding Occupational Exposure Limit should be pursued as alternative to the current restriction proposal. The OEL must be based on correct scientific assumptions and include a socio-economic impact analysis.

Main uses of the salts

Cobalt carbonate and cobalt dinitrate are raw materials in the manufacture of catalysts and are considered transported isolated intermediates or on-site isolated intermediates for REACH purposes. They are used in the manufacturing process of hydroprocessing catalysts including hydrodesulfurization catalysts (HDS), catalysts for Fischer-Tropsch reaction, gas-to-liquid refinery catalysts, and certain hydrogenation and selective amination catalysts to produce chemical intermediates (chemical catalysis).

Alternatives

Any alternatives that exist are not viable due to compromised catalytic performance and efficiency, limited availability, being prohibitively expensive or requiring major plant reconstructions.

Risk management measures currently in place

Cobalt carbonate can be used in powder form during catalyst manufacture. Handling of the powder form (as a raw material) is limited and occurs during primary steps of the process under well-controlled conditions (some automation & LEV) or in predominantly closed systems.

Cobalt dinitrate is used in closed systems as an aqueous solution or as a crystalline, non-dusty solid. Since it is contained during its life cycle, the worker exposure is well controlled.

Catalysts Europe member companies are committed to the continuous monitoring and reduction of workplace exposure.

Benefits of the use of cobalt salts in catalyst manufacture

In addition to removing impurities from fuel, cobalt-containing catalysts have direct industrial benefits allowing reactions at lower temperature, lower pressure and reducing by-product formation.

Limiting the availability of the cobalt salts in Europe would significantly affect the efficiency of catalytic processes and have negative environmental costs: less efficient and more energy-intensive processes, and a higher carbon footprint.

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About Catalysts Europe

Catalysts Europe is a sector group of the European Chemical Industry Council (Cefic) and represents the leading catalyst producers in Europe. Catalysts Europe is a non-profit organisation established in 1983 and dedicated to promoting the safe use and benefits of catalysts to society.