ASD Comment

ASD comments to the public consultation 0032-01, 0032-02, 0032-04 and 0032-05 for the use of Chromium Trioxide in the surface treatment in the Aviation, Space and Defence industries

About ASD

ASD represents the Aeronautics, Space, Security and Defence industries in Europe. Based in Brussels, the organisation's membership today comprises 15 major European aerospace and defence companies and 26 member associations in 19 countries (Austria, Belgium, Bulgaria, the Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, Turkey and the UK). These industries reach a turnover of 197.3 billion euro, invest 20 billion euro in R&D, employ close to 778,000 people and counts over 3000 companies, 80,000 suppliers, many of which are SMEs.

On the Availability of Alternatives and Impact of Non-Authorisation

Safety is the primary concern of the Aerospace and Defence industry. Chromate-based chemical processes and paint systems have been used for a substantial period of time in the corrosion protection of metal components used in these industries and such systems are well understood.

The Aerospace and Defence sector are minority users of these chemicals. Due to stringent airworthiness, safety requirements and the longevity of the final products; the technical requirements of the industry are demanding and consequently involve long term test programs to allow confident replacement by alternatives.

The Aerospace and Defence industry has been trying for many years to identify and qualify suitable replacements for chemical products that rely on Chromates for their production. To date, suitable replacements have been identified for some but not all applications.

ASD therefore supports the application for Authorisation for continued use of Chromium Trioxide. In particular for the following uses:

- Formulation of mixtures
- Functional chrome plating
- Surface treatment for applications in the aeronautics and aerospace industries, unrelated to functional chrome plating or functional chrome plating with decorative character
- Surface treatment for applications in architectural, automotive, metal manufacturing and finishing, and general engineering (i.e. including non-aero defence applications)

The requirements of the industry in terms of certification and validation of new products have been reflected in the Analysis of Alternatives. ASD recommends that the information included in the ECHA/EASA paper "An elaboration of key aspects of the Authorisation process in the context of aviation industry" published April 2014 and available on the ECHA website, is considered when reviewing the Analysis of Alternatives for the above uses of Chromium trioxide. This paper was produced after extensive work by ASD, the US Aerospace Industries Association (AIA), the Association of European Airlines (AEA) together with representatives of ECHA and the European Aviation Safety Agency (EASA).

If suitable chrome-free alternatives are developed in the future, they will need to be implemented across a vast, complicated supply chain. This will be a time consuming and expensive exercise that will require significant additional investment in new plant and machinery by the existing suppliers or major resourcing exercises to switch to new suppliers with the capability to industrialise the application of the new products or processes. The industry cannot "switch-off" one production process and supply chain without first validating and qualifying a new alternative process and supply chain.

Furthermore, replacement solutions will not exhibit the same heritage and maturity as solutions using chromates. It will take time and experience before customers are ready to accept the products using substitutes in some uses, even where qualification and validation campaigns have been successful.

Consequently the impact of non-Authorisation of Chromium Trioxide in the above referenced use cases will broadly be as follows:

1) All new products relying on one or more of the above uses for one or more component parts will be stopped.
2) Production interruption for the majority of Aerospace and Defence industry products will last until either one of the following occurs:
    a. Relocation of all affected processes* takes place to a non-affected country, - including requalification of new supply sources and processes or,
    b. An alternative is developed and substituted after technology validation, certification and industrialisation of the modified process and material (unlikely for many uses based on known technology developments).
3) Aftermarket repair activities will be disrupted by impact on supply of spare parts for both legacy and non-legacy products, and through an inability to repair products in Europe. Due to the size of such products, repair in non-European locations is rarely practical (the aircraft on ground scenario).
4) As a result of the above, there is expected to be some knock on operational impact on space, defence and aviation customer operations.

*Note: relocation of just surface treatment processes outside of Europe is unrealistic. It is very much more probable that the complete production of parts would have to be also done outside of Europe, for logistical reasons and for technical reasons; surface treatment is providing anti-corrosion properties to the parts and therefore need to be done quickly after manufacturing. This would affect the complexity of production relocation and substantially increase the time and resources necessary to accomplish it.**

** Note: relocation of large parts of the supply chain for military products is unlikely to be achievable due to the sensitivity of the product design and functional requirements.

The annual turnover of the European Aviation, Space and Defence industries is 197 billion euros. The impact of non-Authorisation on turnover can be conservatively estimated at a minimum of 50% turnover, for a minimum of 12 months*** – i.e. 99 billion euros. Assuming an average profit of 10% of turnover, the economic value foregone as a result of non-Authorisation may be estimated at €9.9 billion euros.

The minimum additional economic impact resulting from non-Authorisation as a result of downstream market effects would therefore be a substantial effect over and above the highly conservative assessment in the current Socio -Economic Analyses in the referenced applications for authorisation.

*** Note: 50% is likely to be a very low estimate because: though the substance is needed for thousands of components, lack of supply of even one component affects delivery of any assembled product; refurbishment and repair in the aftermarket would also be affected so both new production and aftermarket sales are impacted. It may be possible to transition a few supply lines to outside Europe in 12 months including requalification and acceleration to full production capacity, but not as many supply chains as would be affected and certainly not highly complex sub-assemblies.

Due to the international nature of the Aerospace and Defence supply chain, the above effects would also impact non-European products due to their dependence on supply of components or chemical products from inside Europe, and also due to their need for product repairs at European customer locations.

On the need for Upstream Applications

Given the Authorisation mechanism as specified by the REACH regulation, an upstream Application for Authorisation was the only possible way to cover the needs of the aerospace and defence Downstream Users.

As explained in the ECHA/EASA paper referred above:

- An Application for Authorisation by a Manufacturer or Importer of a substance could cover the entire supply chain where all uses are already known.
- An Application for Authorisation by a Formulator would cover the supply of chemicals from the Manufacturer or Importer and the supply chain below them.
- However, an Authorisation Application from an Original Equipment Manufacturer (i.e. ultimate downstream users) will only cover its own use and its immediate suppliers' right to supply the chemical product but not the uses of formulators (if any), **nor the rest of its supply-chain (subcontractors, other suppliers, customers and third party repair facilities).**

Due to the high complexity of aerospace and defence industry supply-chains, which include many SMEs, Applications for Authorisation in another format than an upstream Application would not have been relevant (i.e. extremely high risk of supply-chain disruption).

In addition, a DU application would limit the industry's ability to change source of supply for component manufacture or chemical processing as is occasionally necessary for quality, financial or other reasons. The confidential business information held by formulators also presents an obstacle for article manufacturers to complete applications for Authorisation.

However, the downstream companies at one end of the supply chain usually have no relationship with the "upstream" companies at the other end of the supply chain. Therefore, to ensure that communication is established and that relevant data can be provided, a collective approach via an upstream Application is necessary.

The consequences of this necessity of preparing an "upstream dossier" are the following,

- The CSR presents a global situation, for all the sites which use chromium trioxide for surface treatment in Europe. In spite of this global situation, the CSR is a very detailed analysis of the surface treatment processes, including each step and providing a very detailed risk assessment, of the same level of precision as other dossiers available on the ECHA website. Such documents, when using the ECHA's template about RMMs and OCs, constitute a technical referential, adding significant improvement to the BREF in place (2006) and of very high efficiency for continuous audit of the real risk scenarios of each site.
- The AoA is a high level synthesis of the best knowledge in the world about substitution of chromates, compiled by companies both inside and outside of Europe as a result of their shared dependence on European suppliers. The members of the CTAC consortium, in spite of their competitive situation between each other, have been able to express a global situation and to bring to the consortium the relevant technical data.

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