

19 September 2012

Subject: Comments to Annex XIV substances

**Reference; Strontium Chromate; Potassium Hydroxyoctaoxodizincatedichromate;  
Pentazinc Chromate Octahydroxide**

To whom it may concern:

The European Chemicals Agency (ECHA) published a draft recommendation of substances for inclusion in the list of substances subject to authorization (Annex XIV). Hawker Beechcraft is a U.S. aircraft manufacturer that has a large aircraft parts supply base and facilities in the European Union.

We are in agreement with adding the above chemicals to the SVHC list. As an Original Equipment Manufacturer (OEM) this ensures that accurate data is available to provide protection of the environment, health, and safety of consumers and workers. However, taking these substances to the next level of authorization and restriction at this particular time will have a significant negative impact on the very safety of air transportation and on environment we are trying to protect. As an aircraft manufacturer, it is a top priority to ensure the safety and environmental protection of our product for our workers as well as consumers in flight. Our engineering department has been working on achieving maximum safety and environmental protection for many years.

It is noteworthy to state that our products may be in service between 30 and 60 years. During that time, as an OEM, HBC must help its customers maintain these products in the safest manner possible. Therefore, repairs in addition to original processing using the above chromated substances must be available.

Hawker Beechcraft uses metal and composite materials for aircraft manufacturing. Composite material is a high strength-to-weight material used on the aircraft and increases fuel efficiency. Using an alternate non-chromated corrosion protection will require additional weight due to increased coating thicknesses that would be required to achieve equivalent corrosion protection, and would therefore negate any fuel efficiency gains. Also, shorter inspection intervals would result in additional necessary aircraft inspections to examine the aircraft for corrosion. If the above mentioned chemicals are restricted unfavorable results would result; additional weight causes increased fuel consumption and increased inspection intervals cause potential increased worker exposure to other chemicals.

Chromates have been used in the aerospace industry for many years as the **primary** means for corrosion prevention and corrosion control on the airframe. There are many areas that are

inaccessible on the aircraft and are considered principal structural components. Corrosion in these areas could go undetected and result in catastrophic component failure. It is imperative that any alternate materials provide equivalent corrosion protection in these areas, because the expectation for service life may exceed 30 years. Based on the testing conducted by Hawker Beechcraft, non-chromated alternates provide approximately 1/3<sup>rd</sup> of the corrosion protection of chromated materials. This shortened effectivity will increase the waste stream in the form of decommissioned aircraft and discarded parts.

Alternatives for chromated primers, regardless if they are for bonding or general corrosion control, will need to have be developed and tested by the formulators of those products, as well as Hawker Beechcraft as an OEM. Hawker Beechcraft has done some of this testing over the past three years with limited success. Time is needed to further develop new corrosion inhibiting products and adequately test to validate suitability. Further, EASA and FAA approval is a regulatory requirement that must be satisfied prior to implementation.

In terms of long-term protection, there are no primers on the market or in experimental stages to date that perform as well as chromated primers. On composite aircraft, not only is corrosion control important, but also paint thickness. For this reason, the paint system on these aircraft is a “certified” process due to the direct effects of lightning. Paint thickness is critical to the direct effects of lightning so painting extra layers for improved corrosion resistance is counterproductive for lightning strike protection.

Adhesive bonding, basic airframe corrosion protection, maximum product life cycle, reduced environmental footprint, and safety considerations are a few points of concern in the aerospace industry. Hawker Beechcraft hopes that ECHA will consider the following information when making a decision on authorization:

- Aircraft regulatory agencies (EASA, FAA, etc.) mandate that corrosion shall not exceed Level I (superficial corrosion) between inspections. The aircraft must be corrosion free prior to being returned to service.
- Elimination of chromates from corrosion inhibiting compounds will diminish their effectiveness. Risk of missed corrosion of difficult to access structural and safety of flight components presents safety of flight concerns.
- The reduction of corrosion inhibiting capability mandates the frequencies of inspections to be increased to assure continued airworthiness. Incidence of corrosion will increase. Related maintenance and repairs will increase. These activities directly and indirectly have an environmental impact.
- The aerospace industry currently recycles and has dedicated areas for end of life aircraft. Presently, corrosion continues to be the primary cause for aircraft decommission and decertification. Using an inferior corrosion inhibiting compounds exacerbates corrosion; the reduced aircraft life cycle would have a negative impact on these reclamation centers. The rate of waste produced will increase.

- The protection of workers in manufacturing and enforcement when using chromates in manufacturing processes has increased through employee protection and manufacturing regulations at the state level (i.e. HSE, OSHA).
- Manufactured spare parts will have an increased percentage by weight of controlled substances and may require ECHA notification. This will greatly impact our parts distribution in the European Union.
- As to other means of transport, aircraft travel can have less harmful impacts to safety and the environment as opposed to other forms. Aircraft travel per person per mile uses less fuel (Air Transport Action Group), and air travel on a per mile basis is safer than automobile travel (National Transportation Safety Board). The proposed change will have a negative impact on these safety numbers.

Hawker Beechcraft therefore asks ECHA to consider providing an exemption for the above listed substances. It is of our opinion that to obtain an exemption for these products until a long term process can be achieved will ensure the safety of the aircraft in flight.

With Regards;

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