Department for Environment Food & Rural Affairs

Authorisation Decision on AfA069-01

By Marc Casale, Deputy Director, Chemicals and International (Defra)

On behalf of the Secretary of State for Environment, Food and Rural Affairs

Decision date: 19 October 2026

Application ref: AfA069-01

Authorised use

Industrial application of chromium trioxide for the surface treatment of mechanical parts, electrical connectors and associated components

UK REACH authorisation no.:

Authorisation number	Authorisation Holder
UKREACH/26/10/00	AB Connectors Limited (company number: 01914199)

Preliminary matters

Chromium trioxide is listed in Annex XIV to Regulation (EC) No. 1907/2006 concerning the registration, evaluation, authorisation and restriction of chemicals ('UK REACH').[1] As such, chromium trioxide is subject to the authorisation requirement referred to in Article 56(1) of UK REACH.

Chromium trioxide was included in Annex XIV because of its intrinsic carcinogenic and mutagenic properties (Article 57(a) and 57(b) of UK REACH).

Hexavalent chromium (Cr(VI)) is the hazardous component of chromium trioxide to which the hazardous properties are attributed.

[1] References to Regulation (EC) No. 1907/2006, referred to in this decision as UK REACH, are to the assimilated law available online at https://www.legislation.gov.uk/eur/2006/1907

This application is made by AB Connectors Limited with the company number 01914199, whose registered office is at Abercynon, Mountain Ash, Rhondda Cynon Taff, CF45 4SF, Wales, United Kingdom (the 'Applicant').

On 28 March 2025, the Applicant submitted an application for authorisation ('the Application') to the Health and Safety Executive ('the Agency'), for the industrial application of chromium trioxide for the surface treatment of mechanical parts, electrical connectors and associated components.

On 23 April 2026, the Agency sent its opinion (the 'Opinion') to the Secretary of State for Environment, Food and Rural Affairs, and Scottish and Welsh Ministers.

The Applicant is currently covered as a downstream user under authorisation number <redacted>, for chromium trioxide use in the aerospace and defence industries, which expires on <redacted>. This application is for the Applicant's use of chromium trioxide in other industrial sectors, not covered by their existing authorisation (<redacted>).

Decision

1. This decision is addressed to the Applicant.
2. In accordance with Article 60(4) of UK REACH, authorisation is granted to the Applicant, as set out under the following authorisation number for the following use:
    a. **UKREACH/26/10/00:** for the industrial application of chromium trioxide for the surface treatment of mechanical parts, electrical connectors and associated components.
3. The review period referred to in Article 60(9)(e) of UK REACH is set at 12 years. The authorisation will cease to be valid on 19 October 2038 unless a review report is submitted in accordance with Article 61(1) of UK REACH by 19 April 2037.
4. The authorisation is subject to the following conditions as well as the requirement in Article 60(10) of UK REACH to ensure exposure is reduced to as low a level as is technically and practically possible:
    a. The operational conditions (OCs) and risk management measures (RMMs) described in the chemical safety report referred to in Article 62(4)(d) of UK REACH, dated 30 March 2025[2] must be adhered to, subject to the following conditions in paragraphs 4.b. to 4.t., which take precedence over the OCs and RMMs described in the chemical safety report where these are incompatible.

[2] This is a reference to the chemical safety report dated 30 March 2025 submitted by the Applicant as part of the Application. The risk management measures and operational conditions are described in sections 9 (exposure assessment) and 10 (risk characterisation related to combined exposure).

b. By 19 October 2027, the use of air agitators in the passivation tanks must be replaced with:[3]

   i. suitable eductors[4]

   or

   ii. an equally effective risk management measure that will eliminate the formation of an airborne mist containing chromic acid that could be released into the working area.

c. Where modifications are made to the passivation tanks, the quality of the finished product must not be adversely affected. Any new equipment that is introduced into the passivation tank must be manufactured from materials that can withstand the highly corrosive Cr(VI) passivation solution.

d. Where it is not technically feasible to replace the air agitators in the passivation tanks with the measures set out in paragraph 4b.i. or paragraph 4b.ii., appropriate abatement technology (for example, a suitable filter or a wet scrubber) must be incorporated into the local exhaust ventilation system to minimise the Cr(VI) emissions that are released to the environment. This must be done within 12 months of establishing the technical feasibility of installing eductors or other RMMs.

e. By 19 October 2027, the use of air guns for blowing excess water off the treated connectors must cease. If it is not technically feasible to cease use of the air guns, a suitable extraction booth must be designed, installed and commissioned by 19 October 2027 to reduce the air pressure to the air guns to no more than 2 bar. The design of the air gun nozzle that is used must be optimised for the activity concerned.

f. By 19 April 2027, suitable personal protective equipment (PPE) and respiratory protective equipment (RPE) must be worn by those carrying out cleaning activities in the Plating Shop and maintenance activities. The PPE and RPE must prevent inadvertent contact of unprotected skin with any contaminated surfaces.

g. By 19 April 2027, any employee who needs to wear RPE for any particular task must:

   i. be trained on how to don and doff their RPE correctly;

[3] To assist with the change, the authorisation holder should commission a Process Engineer.
[4] Eductors are described by the Agency as being a pumped circulation system used for solution mixing which utilises the venturi effect.

ii. have undergone and passed face-fit testing for each type of RPE that relies upon the achievement of an adequate seal between the face and the mask in order to be effective;

iii. be clean-shaven whenever they need to wear RPE that relies upon the achievement of an adequate seal between the face and the mask in order to be effective, or be provided with, trained in the use of, and uses a powered air-purifying respirator (PAPR); and

iv. clearly mark the date of first use on any semi-disposable RPE, for example a 3M 4279 mask, and replace that mask within one calendar month of that first use date.

h. Air monitoring must be undertaken to measure at least two full-shift personal inhalation exposure measurements for the operators that undertake the Cr(VI) passivation activity during each year of authorisation, using the methodology specified in BS ISO 16740. The workplace air sampling surveys must be undertaken by a qualified occupational hygienist at least once per year.[5]

i. In every case, these personal exposure measurements must:

i. be based on the methodology specified in BS ISO 16740;

ii. be taken within the 30 cm breathing zone of the wearer with samplers positioned on the outside of any RPE that may be worn;

iii. be representative of the range of tasks with possible exposure to Cr(VI), and of the total number of workers that are potentially exposed; and

iv. be supported by adequate contextual (and observational) information for each sampling event sufficient to interpret and inform the results (as detailed within BS EN 689).

j. Once at least 10 personal exposure measurements have been collected, the predicted 90th percentile exposure level based on that exposure data set must be determined.[6] That 90th percentile level must be compared to the Agency's internal benchmark level of 5 μg/m^3 as an 8-hour TWA (the 'Agency Benchmark'). No measurement results from any fixed location should be included in the determination of the 90th percentile exposure level; only personal exposure measurements on the operators concerned can be used to

[5] A searchable Register of qualified occupational hygienists, launched in 2024, can be found at Register of Occupational Hygiene Professionals - British Occupational Hygiene Society (BOHS). Frequently asked questions (FAQs) about the Register can be found at Professional Register of Occupational Hygiene Professionals FAQs for GP. A searchable Directory of 46 Occupational Hygiene Services can be used to find one or more occupational hygiene consultants at Directory of OH Services.

[6] The 90th percentile exposure level would preferably be calculated using an exposures statistical analysis tool such as Expostats Tool 1.

determine the 90th percentile exposure level. Separate determinations of the 90th percentile exposure level must be undertaken for each similarly exposed group (SEG).

k. The information gathered must be used to regularly review the effectiveness of the OCs and RMMs. If personal exposures are at or above the Agency Benchmark, prompt action must be taken as appropriate to further reduce workers' exposure to Cr(VI). The RMMs used must be appropriate and effective to limit the exposure risk to Cr(VI).

l. A regular biological monitoring (BM) programme must be instigated to measure the post-shift chromium-in-urine concentrations for individual employees who may have been exposed to Cr(VI) via inhalation, ingestion, or direct contact to unprotected skin. The results from the BM programme must be compared to the relevant biological monitoring guidance value (BMGV).[7]

m. If during the authorisation period either the 90th percentile Cr(VI) personal airborne exposure value exceeds the Agency Benchmark, or the BM result for any individual is over the BMGV, then the following actions must be undertaken:

    i. A thorough review of the working process. This must include evaluation of working practices and management/supervision; and

    ii. A review of the effectiveness of the OCs and RMMs using the information gathered. The RMMs used must be appropriate and effective to limit the exposure risk to Cr(VI).

n. If the RMMs are modified, a personal monitoring survey must be undertaken at least 4 times per year, using the methodology in BS ISO 16740, until a minimum of 10 new personal exposure data points have been obtained, from which the new 90th percentile of the worker’s personal exposure to Cr(VI) after the change in the RMMs shall be determined.

o. The results of the measurements referred to in paragraph 4.h. to paragraph 4.p., including all relevant detailed contextual information, should be made available to the Agency if requested and included in any subsequent review report.

p. Enough personal exposure data should be collected over a period of time so that reliable estimates of the 90th percentile, geometric mean (GM) and the geometric standard deviation (GSD) for the exposure distribution for each job role can be determined. To determine reliable estimates of the GM and GSD

[7] The relevant BMGV can be found in table 2 of HSE Guidance Note EH40.

a minimum of 3 personal data points are required, with up to 10 personal exposure data points for each SEG.

q. Measurements of the concentrations of total chromium and Cr(VI) released to wastewater must be taken. These measurements must:

   i. be taken in accordance with good practice;

   ii. be taken at the final discharge point to the foul sewer;

   iii. be analysed for total chromium and Cr(VI) by an accredited (e.g. Monitoring Certification Scheme (MCERTS)) laboratory using an appropriate level of detection and recognised method;[8]

   iv. be taken at a frequency of sampling that is in accordance with what is stated in the authorisation holder's environmental permit (where applicable) and be representative of both normal OCs and any prolonged increases in operation;

   v. be used to improve or maintain the effectiveness of the OCs and RMMs in limiting the releases to the environment. This process should include checking results against emissions limit values and the most up-to-date Best Available Technique (BAT) standard to inform the appropriateness and effectiveness of the OCs and RMMs; and

   vi. be made available to the Agency upon request.

r. The accuracy of spot tests should be verified and improved through benchmarking against the results obtained from the CEN/ISO methods.

s. Measurements of the concentrations of total chromium and Cr(VI) released to air must be taken for the site covered by the authorisation. These measurements must:

   i. be taken in accordance with good practice;

   ii. be taken at each of the stacks that discharge the air extracted by the local exhaust ventilation (LEV) systems on the Cr(VI) passivation tanks;

   iii. be analysed for total chromium and Cr(VI) by an accredited laboratory (such as MCERTS) using an appropriate level of detection and recognised method;

   iv. be used to improve or maintain the effectiveness of the OCs and RMMs in limiting the releases to the environment; and

[8] Recognised methods available for water - Monitoring discharges to water: CEN and ISO monitoring methods

v. be made available to the Agency upon request.

t. Within 2 months of implementing the conditions set out in paragraph 4.b. to paragraph 4.e., the monitoring specified in paragraph 4.h. to paragraph 4.p. must be undertaken to verify the effectiveness of the revised RMMs. Once the effectiveness of the new RMMs has been demonstrated, routine air monitoring may resume. The monitoring should be representative of normal OCs and any prolonged operation.

Background

5. This decision is made under Article 60(4) of UK REACH and having obtained the consent of Scottish and Welsh Ministers.

6. In making this decision I have taken into account:

   a. The Application submitted to the Agency

   b. The provisions of Article 60 of UK REACH, including the elements referred to in Article 60(4) and the requirements of Article 60(5)

   c. The Agency's Opinion.

Reasons

7. In its Opinion, the Agency concluded that it is not possible to determine a derived no-effect level for the carcinogenic and mutagenic properties of chromium trioxide. Therefore, for chromium trioxide it is not possible to determine a threshold in accordance with Section 6.4 of Annex I of UK REACH.

8. Therefore, and in accordance with Article 60(3)(a) of UK REACH, this means that Article 60(2) of UK REACH does not apply to this Application, and authorisation may only be granted on the basis of Article 60(4) of UK REACH.

9. Authorisation may only be granted under Article 60(4) of UK REACH if it is shown that the socio-economic benefits outweigh the risk to human health or the environment arising from the use of chromium trioxide and there are no suitable alternative substances or technologies.

Risk to human health

10. Chromium trioxide presents a risk to human health due to the carcinogenic and mutagenic properties of its hazardous component hexavalent chromium (Cr(VI)).

Workers

11. The potential human health risk to directly exposed workers is the risk of developing lung cancer as a result of inhalation of Cr(VI) in the course of work

activities.[9] The Agency considers that the dermal and ingestion routes of exposure are relevant to this application, meaning skin and/or gastrointestinal cancer could also arise from the use of chromium trioxide if the Applicant does not diligently apply suitable RMMs.

12. To assess worker exposure to chromium trioxide, the Applicant provided data from five Cr(VI) personal exposure measurements from 2021 and 2025. Despite the limited data set, the Agency was able to calculate a predicted 90th percentile of exposure of 1.3 µg/m^3 for passivation tank operators. The Agency subsequently calculated that a standard working pattern across all worker contributing scenarios (WCS) results in an overall Cr(VI) inhalation exposure of 3.4 µg/m^3 as an 8-hour time weighted average (TWA) on each of the 200 days per year when the Cr(VI) passivation process operates. The Agency estimated the number additional statistical fatal and non-fatal cancer cases to have a combined monetised risk of £0.15 million.[10] The Agency proposed a monitoring arrangement as part of the conditions of authorisation in paragraph 4 to address the concerns around limited data for the calculation of worker exposures.

13. The results of the worker exposure surveys indicate that exposure is kept below the Agency Benchmark. The Agency however highlighted that for the type of process being conducted it is possible to achieve significantly lower exposures. The Agency highlighted that the root cause of these higher than expected exposures is the use of air agitation in the passivation tanks. In addition, the use of an air gun to blow down parts at a pressure of 7 Bar once they are removed from the passivation tanks will also produce chromic acid vapour. In both cases, this results in the generation of excess chromic acid vapour. The conditions in paragraph 4.b. to paragraph 4.e. should rectify these issues by removing the root causes of the excess generation of chromic acid vapour (the use of air agitators and the air gun).

14. The Applicant described various OCs and RMMs in their application. These include, but are not limited to, air monitoring, LEV, washing down of products and blowing down of products with an air gun. The Agency used an RMM checklist

[9] Dermal and ingestion are other routes of exposure. However, exposure via ingestion is factored into the risk of inhalation exposure and exposure via the dermal route was not measured or modelled in the Application as there is no derived no-effect level (DNEL) or other standard against which results may be compared.

[10] The risk figures are adjusted for the length of the review period, and a ratio of fatal to non-fatal cancer cases is applied (79:21 for lung cancer). A latency period of 10-years is applied to lung cancer cases and all particles are assumed to be inhaled, so all cancer cases are assumed to be lung cancer, rather than intestinal cancer. To monetise these cases, the Agency used willingness-to-pay methodology (based on an ECHA study in 2016). The Agency applied values of £5.9m per statistical fatal cancer case and £0.4m per statistical non-fatal cancer case. A discount rate of 1.5% is applied.

with RAG ratings to assess their appropriateness and effectiveness.[11] The Agency concluded in its Opinion that the Applicant's RMMs met most of the minimum requirements, but that certain deficiencies in the RMMs were identified. These deficiencies are:

a. The Applicant uses air agitation to stir the solution in the passivation tanks. This stirring technique has the potential to generate aerosol mists. The Agency concluded that the continued use of air agitation to stir the treatment solution in the Cr(VI) passivation tank does not meet the obligation in Article 60(10), to ensure that exposure is reduced to as low a level as technically and practically possible.

b. The use of an air gun with an air pressure of up to 7 bar for blowing excess water off the treated connectors in an open working area generates an airborne mist that is liable to be spread and distributed a significant distance away from the blowing down activity.

c. There is uncertainty over the use of personal protective equipment (PPE) by those carrying out cleaning and maintenance activities in the plating shop.

d. There is uncertainty over whether the Applicant has provided suitable decontamination and changing areas.

e. There is uncertainty about the measures that the Applicant has in place to manage the respiratory protective equipment (RPE) that is used in WCS 1, WCS 3, WCS 5, WCS 6 and WCS 9.[12]

15. The Agency considers that if a company does not diligently apply suitable RMMs, the likelihood is that:

a. Gross levels of Cr(VI) contamination may occur on multiple surfaces.

b. Fugitive releases of airborne Cr(VI) mist will result in deposition of chromic acid droplets onto surfaces.

c. Surface contamination may then be transferred on to either gloves, or possibly directly on to unprotected skin.

d. Cr(VI) contamination from gloves may be transferred onto mouths due to inadvertent and involuntary hand-to-mouth contact, particularly if poor glove removal practices are used or poor personal hygiene practices are prevalent.

[11] RAG refers to Red, Amber or Green. Red means that the RMM is not appropriate or effective in limiting risk. Amber means either that data is missing, or that the RMM is appropriate, but its effectiveness could be improved in limiting the risk. Green means either that the RMM is not applicable in the circumstances, or that it is appropriate and effective in limiting the risk.

[12] A summary of all WCS can be found in Table 2.2.1 of the Agency's Opinion.

16. Due to the deficiencies outlined in paragraphs 14 and 15, the Agency concluded that the Applicant's current OCs and RMMs are not appropriate nor effective in limiting the risk to workers.

17. Having evaluated the Agency's assessment, I agree with the Agency's conclusion that there is a lack of sufficient and reliably measured worker exposure data and the Applicant's current OCs and RMMs are neither appropriate nor effective. However, I agree that the OCs and RMMs would be appropriate and effective at limiting exposures when considered in conjunction with the additional conditions set out in paragraph 4.

Humans via the environment

18. The Applicant highlighted four routes for Cr(VI) releases to the environment (air, water, soil, and waste).

19. For emissions to air, the Applicant indicated that the treatment tanks are each fitted with LEV, with the airflow passing across the surface of the tank. The Applicant confirmed that the airflow over the tanks is checked weekly using an anemometer and adjusted with baffle plate controls as required. The Applicant reported annual emissions of approximately 1.4kg/year of total chromium. The Agency noted that there are no air abatement technologies currently in place and that the emissions of 1.4 kg/year are higher than would be expected from a non-electrolytic process. In view of these elevated emissions, the Agency concluded that the lack of abatement technology is neither appropriate nor effective, with any uncertainty in evidence insufficient to alter their overall conclusion. The Agency highlighted that the root cause of these elevated emissions is likely to be the use of air agitators within the passivation tanks. The Agency noted that the conditions set out in paragraph 4.b. to paragraph 4.d. and the monitoring arrangement in paragraph 4.s. should reduce the risk to humans via the environment, primarily by preventing the generation of chromic acid vapour as set out in paragraph 4.b. to paragraph 4.c., but also if that is not possible to do, by installing abatement technology as set out in paragraph 4.d.

20. The Applicant highlighted two emissions routes to water. For both routes, the Agency concluded that the OCs and RMMs in place are appropriate and effective. The first route is for spent chromium trioxide, which is pumped into drums and stored in a lockable, bunded chemical storage area. Collections are made every two weeks for subsequent disposal of the waste by a licenced hazardous waste contractor. The Agency's Opinion indicates that an annual volume of 5,000 to 6,000L of liquid waste is disposed of via this route. The second route applies to all other liquid waste. An on-site wastewater treatment works (WwTW) is used to treat all other liquid waste on site and discharge it to sewer as effluent. The Applicant holds a permit from Natural Resources Wales (NRW) to conduct this activity, and their annual discharge rate is 0.1% (0.263kg/year) of total chromium, which is below NRW's permitted levels. The

Agency highlights that the process undertaken with the WwTW is appropriate and in line with the BAT standards.[13] There is however some uncertainty due to the lack of information on the treatment efficiency of the WwTW. The monitoring arrangement set out in paragraph 4.q. to paragraph 4.r. should address this concern, and the Agency stated that the uncertainty is not significant enough to affect the conclusion of whether the OCs and RMMs are appropriate and effective.

21. For emissions to soil and emissions to waste, the Agency concluded that the OCs and RMMs are appropriate and effective. There is some uncertainty around secondary emissions however, the Agency noted that in both cases emissions through secondary routes are likely to be insignificant or negligible.

22. The Agency calculated the monetised excess risk to be up to £5.60 million for fatal and £0.11 million for non-fatal cancer cases over a 12-year period[14]. This risk is caveated by the Applicant's use of a more conservative modelling tool and leads to exposure estimates being an order of magnitude greater than other dispersion models. When combined with the Agency's already conservative approach of applying the same concentration at 100 meters from the site to all of the population within 1,000 meters, this means that the estimated risks to humans via the environment are extremely conservative.

23. After evaluating the Agency's assessment, I agree with the Agency's conclusions that the OCs and RMMs are appropriate and effective for emissions to water, soil, and waste, and that the OCs and RMMs are not appropriate nor effective for emissions to air. However, I agree that the OCs and RMMs for emissions to air will be appropriate and effective at limiting exposures when considered in conjunction with the additional conditions and monitoring arrangements set out in paragraph 4.

Socio-economic analysis

24. In its Opinion, the Agency assessed the socio-economic benefits arising from the applied for use and the socio-economic implications of a refusal to authorise. The socio-economic benefits of authorisation consist of avoided producer surplus loss and avoided social cost of unemployment, and the Agency estimated this to be at least £6.03 million over 12 years. In addition, the Agency identified that there

[13] The BAT standards for emissions to wastewater are 0.1 mg/L for Cr(VI) and 1.0 mg/L for total chromium. It is not possible to determine the concentration of Cr(VI) using the concentration of total chromium.

[14] The risk figures are adjusted for the length of the review period, and a ratio of fatal to non-fatal cancer cases is applied (79:21 for lung cancer). A latency period of 10-years is applied to lung cancer cases and all particles are assumed to be inhaled, so all cancer cases are assumed to be lung cancer, rather than intestinal cancer. To monetise these cases, the Agency used willingness-to-pay methodology (based on an ECHA study (2016). The Agency applied values of £5.9m per statistical fatal cancer case and £0.4m per statistical non-fatal cancer case. A discount rate of 1.5% is applied.

could be potential significant non-monetised benefits to national security and infrastructure in the event of a decision to authorise by ensuring the continued provision of electrical connectors for the defence, rail, aerospace and industrial sectors.

25. Having evaluated the Agency's assessment, I agree with its conclusions on the quantified and non-quantified benefits.

Conclusion on whether the benefits outweigh the risk

26. In its Opinion, the Agency concluded that the Applicant has demonstrated that the monetised socio-economic benefits of granting authorisation (at least £6.03 million over 12 years) are greater than the monetised risks to human health (up to £5.86 million over 12 years). Moreover, this is a cautious upper bound estimate of monetised risks, based on highly conservative assumptions. At the same time, the monetised benefits are a lower bound estimate, and related non-monetised benefits could be significant.

27. I consider that the Applicant has shown that the socio-economic benefits outweigh the risk because of:

    a. The likely quantitative benefits in respect of the avoided producer surplus loss and avoided social cost of unemployment to the Applicant.

    b. The likely qualitative benefits in respect of the avoided impact on national infrastructure.

    c. The assessed risks from the use of chromium trioxide.

28. Having evaluated the Agency's assessment, I agree with the Agency's conclusion that the socio-economic benefits of authorisation outweigh the risk.

Alternatives

29. The Agency concluded in its Opinion that currently there were no available alternative substances or technologies with the same function and a similar level of performance that were technically and economically feasible for the Applicant. There were no comments submitted by interested third parties in the consultation indicating that there are alternatives available that are technically and economically feasible.

30. In their Application, the Applicant stated that for an alternative to be suitable and viable, several criteria must be met. These criteria are: Corrosion resistance, electrical conductivity, adhesion properties, environmental stability, mechanical durability and regulatory compliance.

31. The Applicant provided details of their attempts to identify a technically and economically feasible alternative. They identified four potential alternatives. In all

cases, the alternatives failed to meet their criteria, due to the inability to simultaneously perform in terms of corrosion resistance and low electrical resistance. The Applicant highlighted that due to its dependence on chemical manufacturers, subsequent industrialisation, standards definition, original equipment manufacturer qualifications and supply chain adoption, simply identifying a technically viable alternative could take seven to ten years.

32. As there was in its view no viable alternative, the Applicant did not provide a substitution plan, however the Applicant indicated that once a technically suitable alternative was identified, it could take a further seven to ten years to conduct the substitution due to the following factors:

    a. Difficulty scaling production processes whereby a suitable level of control is present (the point at which the production process is sufficiently stable and well-managed). This may cause delays to the production of test specimens of suitable quality and volume.

    b. New coatings may need to be applied thicker than legacy coatings. The requirement to compensate for this during machining of components may cause unforeseen difficulty and necessity to invest in new equipment/processes.

    c. An alternative coating will need to be suitable for a wide variety of products, each having specific performance requirements. There is potentially a need to identify and qualify multiple alternative options if not all requirements can be met by a single alternative.

    d. Lack of availability of funding for initial investments.

33. The Agency concluded that the Applicant has clearly demonstrated that the shortlisted alternatives do not meet the minimum technical requirements and industry standards. Therefore, the Agency concluded there are no technically feasible alternatives available with the same function and similar level of performance as the current Cr(VI) containing products.

34. Having evaluated the Agency's assessment, I agree with the Agency's conclusion and consider that the Applicant has discharged their burden of proof in demonstrating that there are no suitable alternatives. In reaching this conclusion, I have considered the Agency's assessment of the technical and economic feasibility of alternative substances that are available. The Agency did not evaluate the risk of alternatives due to the alternatives not currently being technically feasible.

Review period

35. In its Opinion, the Agency recommended the review period referred to in Article 60(9)(e) of UK REACH should be set at 12 years. In reaching its conclusion, the Agency noted:

    a. In their Application, the Applicant requests a review period of 12 years.

    b. The Applicant has demonstrated that there are no technically and economically feasible alternatives available with the same function and similar level of performance as chromium trioxide. The Applicant asserts that identifying a technically viable alternative could take seven to ten years, with a further period of seven to ten years necessary to then commercialise and deploy such an alternative. Such timescales are consistent with those observed in other sectors with a similar use

    c. The Applicant is not an expert in surface engineering and as such they rely on R&D carried out by major process chemistry suppliers. This will limit their ability to actively find alternatives.

    d. The benefits of continued use outweigh the risks. The Agency has not identified any further uncertainties in relation to the quantitative and qualitative elements of the Applicant's assessment of the socioeconomic benefits and the monetised risks to human health associated with the continued use of the substance.

    e. The Agency considers the Applicant's analysis provides robust conclusions with respect to the socio-economic benefits outweighing the risks of use, and that there are no technically or economically feasible alternatives.

36. Having evaluated the Agency's assessment, I agree with the Agency's conclusions on these points and its recommendation for a 12-year review period. The authorisation will therefore end on 19 October 2038.

Conclusion

37. For the reasons set out above I conclude that the socio-economic benefits outweigh the risk to human health for the use of chromium trioxide referred to in paragraph 2, and that there are no suitable alternative substances or technologies.

38. The Scottish Ministers and the Welsh Ministers have given their consent to this decision in accordance with the requirements of UK REACH.



Marc Casale

Deputy Director, Chemicals and International

On behalf of the Secretary of State for Environment, Food and Rural Affairs