REQUEST FOR ADDITONAL INFORMATION

Legal name of applicant(s):	Monroe Czechia s.r.o.
Submitted by:	Monroe Czechia s.r.o.
Date:	28 May 2021
Substance:	Dichromium Tris(chromate)
Use title:	Use of dichromium tris(chromate) in a post-treatment step of the autodeposition coating process of shock absorbers for automotive vehicles.
Use number:	Use 1
Communication Number:	AFA-C-2114554913-43-01/F
Submission Number:	TQ831466-08

	ECHA Request RAC Questions	Applicant Response
Clarifications on the general descriptions and introduction		
1	In the CSR p. 15 it is mentioned: "Adhering Cr(VI) from the passivation rinse is rinsed off in the misting zone before the coating dip almost completely. In the oven, the last residual amounts of Cr(VI) will react with the polymer forming Cr(III), in a way that no Cr(VI) can be found in the surface extract. As noted above the Cr(VI) in the reactive rinse is available from CrO3 and DCTC within the Bonderite." Please clarify if the passivation rinse and the misting zone belong to the pre-treatment process, and if the coating dip is the painting step in figure 9.1. If not, please explain how these process steps relate to the reactive rinse. Also, please clarify where the Cr(VI) in the passivation rinse comes from.	"Passivation rinse" is another term the Applicant uses for the reaction rinse. The paragraph in page 5 should be reworded as follows: *"The result of the reactive rinse bath process is that Cr(VI) within the Bonderite diffuses into the porous coated layer where it will react with oxidisable substances, such as the steel or even certain groups of the polymer, forming Cr(III). Any remaining Cr(VI) from the reactive rinse is rinsed off in the misting zone before entering the curing oven tunnel. In the oven, the last residual amounts of Cr(VI) will react with the polymer forming Cr(III), with the result that no Cr(VI) can be found in the surface extract. As noted above the Cr(VI) in the reactive rinse is coming from CrO3 and DCTC within the Bonderite formulation."* So, the Cr(VI) is coming from the chromium trioxide and DCTC used in the reactive rinse. Regarding Figure 9.1, the coating dip is indeed the painting step in figure 9.1, as seen in Figure 4.1 of the combined AoA-SEA.
2	In page 20 of the CSR, you mentioned that: "*Biomonitoring of hazardous substances has been carried out on workers associated with the handling of Cr(VI) at the site. There has been no adverse findings with regards to Cr(VI) levels in either urine or blood when compared to national limit values. As results from the biomonitoring are confidential they have not been used in the quantitative risk assessment in this CSR.*" Please provide a summary of an anonymized biomonitoring data set, including contextual information	As mentioned in Section 9.2 of the CSR, the Czech government regulations require that employees who work at chrome electroplating operations participate in a medical surveillance program. The Applicant outsources this program to a medical provider in Liberec who performs an examination every 1-2 years. Personnel who participate in this program include all workers with potential exposure to Cr(VI) and personnel who work at the chrome neutralisation operation (WWTP). Results are returned confidentially to the onsite contract physician. The physician provides the Applicant's management with a written medical opinion, including a determination on whether the employee can work without restrictions. - The anonymised biomonitoring data set is not available to the employer. The Applicant receives only the overall health status per worker e.g. "able to

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<td>regarding the exposure measurements performed for the workers exposed to Cr(VI).
Please clarify which is the national limit value you mentioned in the text above.</td>
<td>perform work” OR “able to work with exceptions” OR “unable to perform work”.
- The Applicant has asked the external laboratory to provide a summary of an anonymised biomonitoring data set, as requested here. It is uncertain if these data will be available. The Applicant will inform ECHA when the data set is available.
- All workers working with Cr(VI) are medically checked once per year in terms of urine and blood; ENT examination is done every 2 years; and finally X-ray of heart and lungs is performed every 5 years. It is according to national legislation in the Czech Republic.

Occupational exposure limits for Cr(VI) are in section 9.2, p.24 of the CSR. These levels are:
• Permissible exposure limit (PEL): 0.01 mg/m^3 (per worker over an 8 hour shift);
• Maximum permissible limit is 0.1 mg/m^3 (within the work environment).

The national limits for Cr(VI) in urine are as follows:
<table>
<tr><th>Substance
(pollutant)</th><th>Indicator
(what is determined)</th><th colspan="2">Limit values*</th><th>Collection time</th></tr>
<tr><td>Chromium (VI) compounds</td><td>Total chrome</td><td>0.030 mg/g Creatinine</td><td>0.065 µmol/mmol Creatinine</td><td>End of shift at the end of the work week</td></tr>
<tr><td colspan="5">* Only urine with a creatinine concentration ranging from 0.3 g / l to 3 g / l (i.e. from 2.65 mmol / l to 26.6 mmol / l) is suitable for evaluation.</td></tr>
</table>
There is no national limit for Cr(VI) in blood.</td>
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<td>Please clarify if additional static/personal measurements were performed for other WCSs with potential to worker’s exposure to Cr(VI) (e.g. transfer, sampling, laboratory work, maintenance and cleaning activities) to</td>
<td>No additional sampling was carried out for the WCS that do not mention monitoring results in the CSR. The Applicant is already carrying out quarterly measurements at the workstations, which show very low exposure to Cr(VI) as provided in Annex A of the CSR.</td>
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	support the modelled data presented for the exposure assessment scope. Please specify if a regular exposure monitoring program for workers, based on specific tasks with potential exposure to CrVI is planned to be performed regularly (e.g. annually).	As mentioned in the response to Question 2 above, all workers working with Cr(VI) are medically checked once per year in terms of urine and blood; ENT examination is done every 2 years to them; and finally X-ray of heart and lungs is performed every 5 years.
4	In the CSR, p. 26, you mentioned that: "The reactive rinse is used at room temperature and as such there are only very low fugitive emissions of Cr(VI) related to this use (*see* **Error! Reference source not found.**). Due to this, and the fact that there is very limited worker interaction with the process there is no exhaust system installed over the bath." In p. 39 you mentioned: "For the reasons outlined earlier in the CSR there is LEV in operation for this WCS." a. Please provide additional explanations to demonstrate that there are only fugitive Cr (VI) emissions during normal plant operations. b. Please clarify what type of ventilation (if any) is installed over the reactive rinse bath. c. If a local exhaust ventilation system is in place, please provide details on its effectiveness and clarify if using of filters has been considered to minimise the release of Cr(VI) to the environment. d. In any case, please clarify how the "Ventilation rate 3 air changes per hour (ACH)" is ensured at the site.	a-b-c. The text in page 39 is a typo and should read: ´there is *no* LEV in operation for this WCS". As described in Section 9.2.4 of the CSR, there is little worker interaction with the reactive rinse bath. The process is automated and takes place in an isolated area. The bath is also at room temperature, which reduces release of Cr(VI) to the air through vapours. Aerosol generation is also very unlikely, due to the slow horizontal speed of the tubes and the speed of dipping. Static monitoring is carried out at 20 cm above the side edge in the middle of the tank, as seen in Figure A.1 in Annex A. It has shown that Cr(VI) exposure is very low (please refer to the monitoring results in Annex A of the CSR) and, therefore, there is no need for further controls of its release. There is no LEV installed over the reactive rinse bath. There is some ventilation at the curing oven (approximately 500 m^3/h removed from the oven), which causes an air current above the reaction rinse and towards the entrance of the oven. This draft reduces the flow of air over the sides of the reactive rinse bath. Cr(VI) is also measured in the outlet of the oven. d. The 3 air changes per hour are calculated based on the air volume that is recycled by the general ventilation in the production building and the calculated total building volume of the building. The Applicant can calculate the quantity of air that is recycled through the general ventilation and a calculation gives the number of air changes per hour, as mentioned in Section 9.1.1.2 (pages 29-30) of the CSR. Please refer to Figure A.1 in Annex A for a photo of the setup of the reactive rinse bath and the entrance to the oven, as well as the airflow and the static measurement location.

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<tr><td>5</td><td>Please provide the number of workers involved in WCS 2 Delivery, storage and transfer of raw material. In addition, for the opinion document, RAC needs meaningful public ranges of the number of workers involved in each WCS described in the CSR and of the total number of workers potentially exposed to DtC. Please provide such numbers.</td><td>There is only one worker who is involved in handling the closed Bonderite 1087 containers in the chemical storage area. That worker also transports the chemicals to the relevant production lines, leaving them closed inside the fenced area for the loader to add to the tanks, as shown in Figure A.2 in Annex A. The empty containers are transferred closed to a waste container collecting area. The worker never has to handle an open container and is not exposed to DCTC. Please refer to Section 9.2.2 (p.31) of the CSR for details on the operational conditions and the process of delivery, storage and transfer of raw materials.

Regarding ranges, please use the range 1-10 for each role and 3-30 for the total number. For example, the first three columns of Table 10.1 of the CSR should look like below (the actual, confidential values can be found in the original confidential version):

<table>
<tr><th>Worker / Role</th><th>WCS</th><th>No. of workers</th></tr>
<tr><td>Production Line / Charging</td><td>3, 4</td><td>1-10</td></tr>
<tr><td>Laboratory / Sampling</td><td>7, 8</td><td>1-10</td></tr>
<tr><td>Maintenance</td><td>5, 6</td><td>1-10</td></tr>
<tr><td>WWTP / Storage</td><td>2, 9</td><td>1</td></tr>
<tr><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td colspan="3">ECS 1 Use of DCTC in the post treatment (reactive rinse) stage the ACC Line</td></tr>
<tr><td>6</td><td>The scope of the assessment for human via the environment doesn't account for exposure/risk due to emissions of wastewater. It is explained in the CSR that there is no Cr(VI) containing waste water generated during normal operating conditions of the ACC Line (the reaction rinse bath is annually shipped off site for neutralization and disposal as hazardous waste) and that the onsite WWTP is primarily set up to deal with process water from the hard chrome plating (HCP) lines operational at the site (not in the scope of the use applied for). However, it also is clear that rinse waters from the maintenance and laboratory activities may</td><td>a. The reactive rinse bath is shipped off-site once a year, during the summer shutdown. The total volume shipped is maximum [redacted] m^3. Based on a Bonderite 1087 concentration of [redacted]% (1-10%) in the bath and typically between 20-30% concentration of chromium compounds, the total quantities of Cr(VI) that is treated off-site is maximum [redacted] (22-330) litres per year.

No rinse water from the reactive rinse bath is treated on-site.

b. Wastewater containing Cr(VI) is pumped to the reduction reactor. Reduction of Cr(VI) to Cr(III) takes place at a pH < 2.5 using $Na_2S_2O_5$. Once the reaction is completed, the absence of Cr(VI) is confirmed through testing with diphenylcarbazide (DFK). If no Cr(VI) is detected, the reduced wastewater, containing Cr(III) is led to the neutralisation step.</td></tr>
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	contain Cr(VI) and are directed to and treated in the onsite WWTP. To better understand the full picture: a. Please clarify what is the amount of Cr(VI) from the reaction rinse bath which is annually shipped off site for neutralization and disposal. b. Please clarify the efficiency of Cr(VI) to Cr(III) reduction guaranteed by the WWTP-on site. c. Please provide information on the quantity of Cr(VI) released from the onsite WWTP yearly as well as an estimation of the quantity attributable to the use applied for. If necessary, please review your assessment to include the emissions to wastewater. d. Please clarify what is the mean Cr(VI) concentration in the sludge after this processing and the annual amounts of contaminated sludge that are shipped off-site.	If the test detects Cr(VI) still present in the wastewater, the reduction reaction is allowed to continue until no Cr(VI) is detected. The limit of quantification of the method is 0.01 mg/l. The neutralisation step uses $Ca(OH)_2$ and Cr(III) precipitates as $Cr(OH)_3$. Sludge containing the precipitated Cr(III) is separated from water via a lamellar separator and then drained on a filter press. c. Within the limit of detection, there is no Cr(VI) allowed to be in the water released from the on-site WWTP. Daily tests are carried out to ensure that Cr(VI) concentration in the outlet of the WWTP is below the limit of detection (0.01 mg/l). It is calculated that approximately 0.06 kg Cr(VI) per year are released from the WWTP due to the hard-chrome plating operations, with a total discharge of approximately 20,000 m^3 per year from the WWTP (including all operations in the Hodkovice plant). As calculated in the response to Question 9 below, only [redacted] (1-15) ml Cr(VI) per year from the ACC line operations are treated in the on-site WWTP. This is a tiny fraction of the total Cr(VI) that is treated in the WWTP from the HCP lines and reduced to Cr(III). Considering, that the quantities of waste from analysis of the reactive rinse samples are just 500 ml per year (2.5×10^{-6}% of total WWTP discharge), any releases from that stream are effectively negligible in the overall treated volume in the WWTP. Therefore, a review of the exposure assessment would not provide any meaningful information. Please also note that the contents of the bath and rinse water from annual maintenance are sent to an external waste management contractor, as mentioned in point a. above. d. The total quantity of sludge from the on-site WWTP that is shipped for treatment off-site is approximately [redacted] tons per year. Cr(VI) concentration is not mentioned in the sludge from the on-site WWTP. This is typically the responsibility of the waste handling company, in order to determine how to treat the sludge. They usually make one measurement when they receive a sludge from a new facility or after changes in the process. Please refer to the confidential

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		document titled "Sludge – result of analysis Monroe L-15-20.pdf" for the results (as total Cr). Please refer to the documents attached in the confidential response (in Czech). The documents include a statement from the contractor on how they will treat sludge from the Applicant's on-site WWTP, a description of the sampling methodology and results of the analysis of the sludge.
WCS 4 Operation of ACC Line (Reactive Rinse Tank)		
7	Please explain if additional RMMs are considered to be implemented with respect to the hierarchy of control and the potential for workers exposure to Cr(VI) during the Operation of ACC Line (*Reactive Rinse Tank*), covered by WCS 4. If not, please explain the reasoning for your choice considering that the reactive rinse tank is open and that it seems no LEV is in place.	As discussed in the response to Question 4 above, the reactive rinse bath is in an area isolated by a separator and the only way in is through a locked door. Only listed, trained personnel are allowed access to the area for very specific tasks, as described in Section 9.2.4 of the CSR. These tasks are short, approximately 5 minutes each and take place either once a day (for loading of chemicals) or every 2 hours. As such, there is effectively no presence of workers in the reactive rinse tank area. For the very short tasks referred to above, RMMs have been introduced. As mentioned in Section 9.2.4 of the CSR, workers carrying out the visual inspection wear respiratory protection equipment, along with other personal protection equipment, such as protective goggles, gloves and clothing / footwear. The same applies for the workers carrying out the transfer of chemicals in the bath (WCS 3, Section 9.2.3 of the CSR). Finally, static monitoring in the plant has shown that the exposure to Cr(VI) is very low and below the national occupational exposure limits for Cr(VI). As shown in the photo in Figure A.1 of Annex A, and mentioned in the response to Question 4a above, there is a slight flow of air towards the oven, reducing the flow of air over the sides of the bath. In conclusion, additional RMMs have been implemented to control the very limited worker exposure to Cr(VI).

WCS 5 Cleaning and Maintenance of equipment - Preventative Maintenance		
8	In page 45 of the CSR, regarding *Cleaning and Maintenance of equipment - Preventative Maintenance*, covered by WCS 5, you mentioned that: "*There are multiple maintenance tasks that can be carried out at site. The estimated exposure time is 30 minutes.*" To better justify the exposure time estimated, please provide a clear description of the maintenance tasks where exposure to DtC can be expected. Note: it is not clear how the example given in 9.2.5.1 (maintenance of fuel pumps) fits in this context.	A non-exhaustive list of preventive maintenance tasks carried out at the site includes: • Visually checking the function of the dosing pumps, e.g. to identify if there is any leak during its operation. • Checking the misting zone and the direction of the blow off nozzle, the speed of the conveyor, and the correct operation of mechanical and hydraulic mixing equipment, visually and by assessing the noise during their operation. • Checking the flow rates, rinsing the flowmeters and keeping records • In case of a breakdown, e.g. of a dosing pump, the line operator has to first clean the pumps using deionised water. If possible, a maintenance operator can change a spare part on a line or go to the maintenance department. All persons authorised to enter the reactive rinse bath area are equipped with appropriate PPE, as described in Section 9.2.6 of the CSR (protective eye goggles, protective gloves, acid-resistant clothing and footwear, RPE).
WCS 9 liquid waste management		
9	A qualitative assessment is conducted for WCS9 and the conclusion drawn is that there is no exposure of Cr(VI) to workers during the operation of the WWTP. Although it seems clear that the wastewater treated onsite originates mostly from the hard chrome plating operations, the CSR identifies sources of liquid waste that originate from the use applied for, e.g. rinse waters from preventative and corrective maintenance or rinse waters from laboratory work. Please explain how these waste streams are transferred to the onsite WWTP and clarify whether the operation of the onsite WWTP is fully automated or if it requires worker's intervention. If necessary, review the assessment made for WCS9 taking these elements into consideration.	With regards to the releases from the laboratory operations, samples are taken twice per day for analysis. The tested sample is then returned and poured in the bath, and a new sample is taken. Only 1 ml of sample is disposed of with every analysis. Therefore, assuming 250 days a year of operation, approximately 500 ml of reactive rinse bath samples are disposed of in a year. The pipes of the sink are not connected to the sewer and any wastewater is collected to an IBC. When the IBC is full, it is taken to the on-site WWTP for treatment. 500 ml of laboratory waste water contain [redacted]% (1-10%) Bonderite 1087 = [redacted] (5-50)ml Bonderite 1087, which contain 20-30% Cr(VI) compounds (from Chromium trioxide and DCTC) = [redacted] (0.5-15) ml CrVI per year, from both Chromium trioxide and DCTC. Rinse waters during maintenance are collected in special containers and sent off-site for treatment in the same way as the contents of the reactive rinse bath. No rinse water is allowed to reach the sewer directly.

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		There are six people in total working on the WWTP, of which one is a team leader. There is one operator on shift and there is continued presence of operators during production, as well as one shift after production. In the WWTP Cr(VI) reduction is a batch process and the process stops automatically. The reduction process is controlled based on pH and redox levels and also based on time (duration of process). The operator makes regular checks, but the process is automated. As it is a batch system, after the batch reduction cycle is finished, the system asks the operator for confirmation. The operator then confirms based on the result of the procedure analytical chemical check, as mentioned in the response to question 6.c above (no presence of Cr(VI) on DFK). After approval, the reduced wastewater containing Cr(III) is pumped to the neutralisation step. The operator regularly checks the process and approves the finish of the reduction and the pumping to the neutralisation step. The only manual process is the sampling from the reactor for the analysis with DFK to verify the absence of Cr(VI) in the reactor. All other processes are carried out remotely.
Combined exposure		
10	Considering that Hard Chrome Plating (HCP) (enclosed plating line) is performed at the same site and that the exposure assessment does not differentiate between DtC and CT, please clarify if any worker involved in the activities described in the CSR are also involved in activities related to the HCP process. If so, please reflect how this may impact the exposure assessment and risk characterisation presented in the CSR.	There are no employees working in both processes. It should also be noted that the hard-chrome plating process is an enclosed one, with little worker interaction. The only person who enters the areas of both production lines is one warehouse employee who carries the chemicals in closed drums and containers to the loaders in each line.
11	Please clarify if a correction of the exposure values to account for frequency was made for any of the WCS.	The exposure values have not been corrected for frequency of the tasks. This appears to be relevant for: • WCS 6 – Cleaning and maintenance, which is not a task that is carried out 5 days a week, but only intermittently. As such, the ELR calculated in Section 9.2.7 of the CSR is most likely an overestimation.

SEAC Questions		
Costs & benefits		
1	Please provide a spreadsheet for human health costs and other SEA calculations of both economic and social impacts. Also, regarding social impacts (table 6-18), please clarify how you calculated the expected number of job losses under both low-loss (10-50) and high-loss (100-1,000) scenario. Please explain also how these estimates are linked to the number of workers exposed in the autodeposition process (3-30).	The three spreadsheets used for the calculations of human health costs and the other SEA calculations are provided as confidential attachments to this request for additional information. The expected number of job losses in the low-loss scenario is estimated from the expected loss in output of shock absorbers in that situation. The number is roughly proportional to the share of output that is expected to be lost. The high-loss option, which is considered a very worst-case scenario, assumes that all employees in the production line will have to be laid off.
2	SEAC notes that the impacts of the most likely non-use scenario are based around disposal of unused material. Please explain why plans can't be made in advance to avoid having unused material.	The worst-case scenario is that there will be insufficient time to use up all DCTC-mixture in stock. And this worst case scenario has been applied here. Clearly, it will be the preferred option that there is sufficient notice about the timing of the termination of use that it is possible to run the production in such a way that there is no unused material at the end of the period. It is worth noting that the supplier is asking for a 6-month forecast for the usage of Bonderite 1087. The Applicant is the only known user of this chemistry/raw material in the automotive sector, and the supplier usually has less frequent blending operations for these smaller volumes, so they ask for longer forecasts to plan their operations in advance. Therefore, the Applicant needs to plan their coating operations in the ACC line and to keep a sufficient inventory of raw materials to carry out these operations, in case of disruptions in supply. This longer term order-supply scenario adds uncertainty as to being able to use all stocks on hand prior to ceasing the production process.
3	Please explain why you consider that all profit losses would be a transfer to other companies and so that there would be no economic impacts, but only distributional? Does this also mean that you assume that your	The Applicant cannot speculate on the capacity of competitors in or outside the EU or on whether they have validated their products for the Applicant's customers' uses. It is possible that they may not be able to produce the necessary parts or that they have not validated the specific parts for the customers and that there will be a shortage for

	competitors have spare capacity and would be able to take over your market share in a very short period?	some products. Vehicle manufacturers (OEMs) tend to have multiple contracts with alternative part suppliers to ensure continued supply of parts and manage the risks of supply chain disruption. Due to that uncertainty, the assumption that all profit losses would be a distributional impact was made as a conservative approach in the calculation of economic impacts. However, the SEA has also considered the scenario that not all lost profits will go to EU competitors, so there will be a net loss for the EU shock absorber manufacturing industry. This is shown in the sensitivity analysis in Section 6.6.2.2 of the combined AoA-SEA. This analysis can also be used to estimate potential inability of competition to supply replacement shock absorbers to customers at a short notice.
5	Please clarify what the most likely NUS is. It is unclear how "*relocation*" is expected to proceed and its impacts. In particular, line 11 of section 5.3.1 reports the following: "*Another option would be to move coating of some damper products to the second coating line that is being operated in the Hodkovice plant*".	Please see the responses to the individual points below.
a	Please explain what the most likely NUS exactly entails.	The most likely NUS is in fact the transfer of the coating of as many shock absorber products as possible to the second, spray-coating, line in the Hodkovice plant. Nevertheless, as discussed in Section 5.3.1 of the combined AoA-SEA, the Applicant will move coating of some shock absorbers to the second coating line of Hodkovice. However, some of the shock absorbers have not been validated for coating in the second line. Furthermore, there is not enough capacity for the second coating line to process all production in the Hodkovice plant. Therefore, it is assumed that, < 35% of sales of shock absorbers will be lost and a proportional number of employees may need to be made redundant. At the same time, the remaining unused materials from the ACC line will need to be properly disposed of. There will also be some unrealised depreciation costs still in the books from a recent investment on expanding capacity of the ACC line, funded by the Czech government.

		In a worst-case scenario, referred to as high-loss in the AoA-SEA, it is assumed that customers may move away from the Applicant's products, due to loss of trust over the supply disruption. This is an extreme, but not unrealistic scenario, which is examined together with the "low-loss" one to give an upper end to the potential losses.
b	How would the second line replace the need for a post-treatment step which is performed only by the line currently using DCTC? If this is the case, why do you still need to use DCTC?	The ACC line is a completely different process to that in the second line. The second coating line is a spraying process, which does not require a post-treatment step using DCTC. As discussed in the response to SEAC question 5a above, the spraying line does not have enough capacity to meet the production output of the Hodkovice plant, nor are all products validated for this production process. Therefore, critically, the ACC line also provides the essential coating capacity in the plant.
c	On page 35, it is stated that for those products which are not validated in both lines, a validation process would be required? Please explain why this is a problem considering that in the substitution plan of any of the short-listed alternative a validation step is required?	The substitution of the process of the ACC line is currently being planned in line with the expiry of the chromium trioxide authorisation review period (authorisation held by the suppliers) in September 2024. This substitution will remove the need to use both Cr(VI) and DCTC in the process. As it will be a change in the production of shock absorbers, the Applicant will need to validate the new products before they can replace the existing ones at customers' vehicles. This validation will be carried out once, at or around the end of the existing review period for chromium trioxide (which is also the requested review period for DCTC). If the Applicant is to commercially produce as yet unvalidated shock absorbers in the NUS that includes moving to the spray coating line, the Applicant will need to validate the same product/s twice: first to be produced at the spray coating line; and then when the alternative is in place at the end of the review period. It also requires additional time, at least 3-6 months if all proceeds smoothly and validation is successful at the first try. Furthermore, please note again that the second line does not have sufficient capacity to take up coating of all dampers currently produced in the Hodkovice plant. So, even if all

		shock absorbers were validated for both lines, a minimum loss of <35% of output would still take place.
d	Have you considered any other NUS(s)? For example, could DRiV US company, which owns Monroe, take over the production in a non-EU site to avoid losses you indicated on page 35 (<35%)?	The Applicant has considered producing or coating some of the shock absorbers in different locations. However, this option has the following challenges: • Hodkovice is the only one of the Applicant's sites that uses the ACC technology. If coating were to be carried out at a different site (outside the EU or in the EU), a different technology would need to be used. This would mean that the shock absorbers would need to be validated for the particular coating technology in use at that site, as discussed in the response to SEAC Question 5b. • The ACC line is used to coat the shock absorbers produced in the manufacturing line which is located in the same building. This reduces logistics within the same plant. The only possible other option would be to move coating to another location in the EU. Non-EU locations were not considered due to the long transport distances involved. If shock absorbers are produced at Hodkovice and coated elsewhere, this would create additional risk of corrosion due to potential exposure to the elements during transport. A maximum of two days of logistic loop (from production to coating) is acceptable, in order to avoid degradation of the uncoated shock absorbers. To mitigate the risk from transportation, the shock absorbers will need packaging (e.g. wrapped in film) or spraying with anti-corrosive coating just for the transfer. These options provide additional cost and complexity to the process. An alternative option could be the use of conditioned trucks, to maintain acceptable conditions of temperature and humidity, but at a substantial cost and with environmental impact. As all these options incur additional costs, they would increase the cost per unit (excluding the cost of the additional carbon footprint). • Furthermore, the shock absorbers will need to be transported over much longer distances, which will increase the cost due to shipping and the need to keep larger inventories of coated and uncoated shock absorbers. The additional costs would drive the unit price up with potential consequences in a competitive market.

		Therefore, the option of manufacturing or coating the shock absorbers at a different location outside the EEA is not realistic. Please also consider that the Applicant will stop the use of Cr(VI) (from Chromium trioxide and DCTC) in the coating process in September 2024 when the review period of the Cr(VI) authorisation ends.
e	Please explain what the costs of alternative NUS (5.3.2) would be and how you concluded that NUS described in section 5.3.1 is the most desirable from an economic perspective?	The alternative NUS mentioned in Section 5.3.2 of the combined AoA-SEA was considered as a short-term option, until the Applicant is able to move away from Cr(VI) completely. Its realisation would mean that the Applicant would still have to carry out validation for all shock absorbers currently coated in the ACC line before they are sold to customers. Until this is achieved, sales of shock absorbers from that line will need to stop. Before validation can start, however, the Applicant needs to make sure that this short-term alternative (which uses only Cr(VI)) is actually suitable and meets customers' specifications. This involves a series of tests and process modifications, to ensure that the technical performance required is met. At the time of writing, the proof of concept of this option has not been achieved. The use of only chromium trioxide in the reactive rinse has not shown promising results, yet, having lower corrosion and wear performance than the specifications, among other concerns. Concerns about stability of the reactive rinse without DCTC have been raised. The Applicant does not know if it will be possible to achieve the required performance with this solution, but it is expected that the earliest it would be possible to start commercial production with this use is October 2022, as mentioned in Section 5.3.2 of the combined AoA-SEA. Finally, as mentioned in Section 5.3.2 of the AoA-SEA, introducing this option, if suitable, would not reduce the risks from Cr(VI) in the process, as DCTC will be replaced by chromium trioxide. The costs of the tests necessary for validation are approximately €5,000-50,000 (as mentioned in Section 6.2.4 of the SEA). A minimum of (1-10) [redacted] validations or as many as (10-20) [redacted] validations will be needed to ensure that all shock absorber platforms for

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		customers are covered. As mentioned in Section 6.2.4 of the SEA, the minimum time for each validation run is 3-6 months, assuming that no issues are identified in the process.
6	Please clarify which figures are to be included in the SEA. Page 8 mentions unrealised depreciation costs. While these are listed in table 6.8, the total only refers to the costs for the disposal of unused chemical agents.	The impacts other than health impacts that are included in the cost-benefit analysis presented in the SEA are the unused material disposal and the social costs of unemployment (in Table 6-13). Lost profits were considered as a transfer cost, but part of lost profits could be considered a net loss, as discussed in SEAC Question 3. The unrealised capital costs (depreciation) in Table 6-8 and section 6.2.2.2 of the AoA-SEA were not included in the costs, but they can be eligible according to Section 3.3 of ECHA's Guidance on SEAs for Authorisation[1].
7	Please explain how a <35% was assumed in optimistic NUS? Is this fully explained by your capacity constraints described on page 35? And why did you assume a loss of all shock absorbers sales in the worst-case scenario? In particular, why in the worst-case scenario your customers may decide to stop purchasing shock absorbers from you?	The <35% loss in profits is driven by capacity constraints of the second coating line. The share of shock absorbers that are currently not validated for the spray coating line is lower than that <35%, which means that the expected loss in output is driven by the capacity of the second coating line. Regarding the worst-case option, it is based on the relationship that parts manufacturers, like the Applicant, have with their customers. Vehicle manufacturers want to have a secure, uninterrupted supply of parts. To that end, they usually sign contracts with multiple suppliers for the same part, one or two for primary supply and others as backup. They also want to have long-term contracts with their suppliers, which are built around trust that the supplier will meet their own end of the contract. If the supplier, i.e. the Applicant, fails to do that, their customers will switch to another supplier as their primary source and this will continue for the long term. Due to this loss of trust, customers may decide to move away from the Applicant in general, which could in the end lead to loss of the whole portfolio of the Applicant's shock absorbers.
8	In section 6.2.2.2 it is stated that you do not intend to decommission the ACC coating line? Does this mean that the line can be used in an alternative productive use (not	The current plan for the line in the Applied-for Use Scenario is that the line will be decommissioned in September 2024, when it is expected that an alternative coating process will be in place, according to the Substitution Plan. This is driven by the expiry

[1] https://echa.europa.eu/documents/10162/23036412/sea_authorisation_en.pdf/aadf96ec-fbfa-4bc7-9740-a3f6ceb68e6e

	necessarily by you)? Could you sell it on the market? If yes, what is the estimated scrap value?	of the review period of the upstream authorisation for Chromium Trioxide, which covers the reactive rinse use of that substance. In the NUS, the Applicant does not foresee that the decommissioning should take place earlier, so in practice there is no difference between the two scenarios (Applied for use and Non-Use Scenario). The cost for decommissioning of the line is approximately €100,000-1,000,000 (€[redacted]), and includes cost for line disassembly, material and waste disposal, remediation and recovery of the factory floor. In any case, the ACC line is unlikely to be sold, as it is a relatively old line, in operation since 2000, and the technology is not commonly used in the EU. Furthermore, line specifications in terms of maximum size of coated parts, capacity performance, arrangements to fit a production line, also make it difficult to find a potential buyer.
AoA/SP		
9	In the SP document, page 9, section 6, regarding product validation and qualification, please clarify if the approval of parts for use in vehicles refers to requirements in legislation regarding vehicles, or if this refers to approval requirements in their customers company procedure or policy.	Product validation and qualification follow customers' requirements and specifications. The Applicant therefore ensures that manufactured coated shock absorbers meet the technical specifications of the Applicant's customers. Commercial production can only start after each part's approval by the customer.
10	On page 13 (section 4.1.1.), it is reported that in the EU there are six major manufacturers of shock absorbers. Are you aware of whether they also use DCTC or they use an alternative? If latter is the case and based on your knowledge, what alternatives have they been using?	The Applicant does not have information on what alternatives competitors are using. It is possible that other manufacturers of shock absorbers are using alternative processes, which do not require a reactive rinse step with DCTC. The most common processes could be KTL and spray coating, which are possibly used by (some of) the competitors.
11	Page 14 of the SEA, section 4.2.1, indicates the step where the use of DCTC is required. Please clarify what function DCTC provides in the reactive rinse step? How do you exactly attribute the function only to DCTC	The functionalities achieved by the reactive rinse is a result of the whole formulation. The functionality of the formulation has been researched by the supplier, who concluded that this formulation provides the best results. Both chemicals combined provide the functionalities mentioned in Table 4.2 (page 16) of the combined AoA-SEA. These functionalities can be achieved with only CT (or DCTC), but the overall

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	(considering that Chromium Trioxide is also used). Is DCTC relevant to all functionalities listed?	performance is lower than when both substances are used. DCTC is also probably acting as a buffer / stabiliser in the solution, allowing a thicker and more protective chromium layer to be deposited, increasing durability of the coating. The Applicant has carried out tests on coating shock absorbers using only Chromium Trioxide, but it has not achieved the same quality as with the current formulation. Results so far do not meet specifications and are thus not acceptable.
12	Table 4.2, 3rd column reports acceptable values for an alternative. SEAC noted that the column refers to Mercedes' standard: DBL 7381.12, but with the exception of layer thickness and thermal resistance no values have been included. Please explain what DBL 7381.12 means and acceptable values are accepted according to this standard. If confidential please provide a meaningful range for the three functionalities: • Corrosion resistance • Adhesion and • Chemical resistance.	The parts need to meet all specifications in the standards of each client and there is no one single value that has to be met but each part is examined as a whole. Each functionality is determined by several tests that must be carried out to verify compliance with the specifications of each client. There are different tests for specific parameters that need to be tested (e.g. corrosion resistance on the edge or along the cylinder, exposure to humidity, neutral salts or other agents, no changes in 100% humidity, chemical resistance, stone impact resistance, etc.). As such, it is not possible to provide a single acceptable value for these functionalities individually. Rather, a series of tests must be passed, according to each customer's specifications and depending on the type of shock absorber and the application. Please see the confidential excerpts from such a standard in Annex A for a sample of the specifications regarding corrosion resistance.
13	Considering that validation of the selected alternative is about to start (page 33 of the SEA/AoA document) could you please confirm that Alternative 1 is the one that will be implemented?	The management of the manufacturing plant has not yet taken a decision on which alternative to follow. These are large investments, with costs in the millions of euros, so all options have to be carefully examined before a decision is made. Whichever decision is taken, however, it will not impact the timeline for stopping the use of DCTC in the Hodkovice plant. The Applicant will stop using DCTC in September 2024, along with the expiry of the current upstream authorisation that covers use of chromium trioxide.

14	Regarding section 5.3.1, page 34, SEAC understands that the second ACC line is used for different products. However, please provide additional information clarifying why DCTC's use is not required in the second line? For example, how do the technical requirements of these product differ from those undergoing post-treatment step with DCTC?	The Applicant manufactures shock absorbers in two buildings at the Hodkovice plant. These buildings are not connected by a conveyor belt and any transfer of materials or products between the two has to be done manually, exposing the materials or products to the environment in the meantime. Each building is serviced by one coating line, i.e. ACC and spraying. Originally, one important driver for selecting the coating process for a shock absorber product was the building in which it is produced, i.e. the location of the assembly line. This choice minimises logistics in the plant, meaning that assembled, but uncoated, shock absorbers do not need to be manually transported to a different location in the plant. There are thus no particular technical requirements that cause a shock absorber product to be coated on the ACC line, other than the need to minimise risk of corrosion or oxidation due to exposure to the elements during transfer to a different building. Please note that the second (spraying) line is nothing like the ACC one, as discussed in the response to SEAC's Question 5b.

Annex A: Photos

Details about emission CrVI from Reactive rinse

Reactive rinsing tank is the last step, located just in front of the oven tunnel opening. Extraction is installed in the oven and tunnel. This ensures an air flow above the reactive rinsing bath towards the tunnel.
Ventilator output is stated in IPPC and Cr6+ emission limit is 2mg/m³.

Zařazení	Emisní zdroj	Pozice	Výduch	Znečišťující látka	Emisní limit [mg/m³]
4.12 Povrchová úprava kovů a plastů a jiných nekovových předmětů a jejich zpracování s objemem lázně nad 30 m³	Linka ACC zdroj č. 102	Odtah z mořící lázně	025	NO_X	650
				HF	5
		Odtah z hořáku sušícího tunelu	020	NO_2	200/100
				CO	100/50
		Odtah ze sušícího tunelu	017	TOC	50
				TZL	3
				Cr^{VI+}	2

Real value < 0,002 µg/m3
Mass flow < Cr6+ 0,00164 g/hour

7.1.2 Souhrnné výsledky měření emisí Cr^{6+}

Datum měření : 26. 09. 2019 — Tabulka č. 2

Číslo měření	Čas měření od - do	*Hmotnostní koncentrace c_X (mg.m⁻³)	Hmotnostní tok M_X (g.h⁻¹)
1	07:20 - 08:20	< 0,002	< 0,002
2	09:56 - 10:56	< 0,002	< 0,002
3	12:20 - 13:20	< 0,002	< 0,002
Průměr		< 0,002	< 0,002
Nejistota měření $U_{k=2}$,%		13	

7.1.2 Souhrnné výsledky měření emisí Cr^{6+}

Datum měření : 1. 12. 2020 — Tabulka č. 2

Číslo měření	Čas měření od - do	*Hmotnostní koncentrace c_X (mg.m⁻³)	Hmotnostní tok M_X (g.h⁻¹)
1	06:46 - 07:46	< 0,00195	< 0,00162
2	09:08 - 10:08	< 0,00203	< 0,00164
3	11:47 - 12:47	< 0,00201	< 0,00165
Průměr		< 0,00203	< 0,00164
Nejistota měření $U_{k=2}$,%		14	

"DRiV: Confidential"

5 DRIV

Figure A.1. Setup of reactive rinse tank and entrance to the oven in response to Question 4 on the CSR.

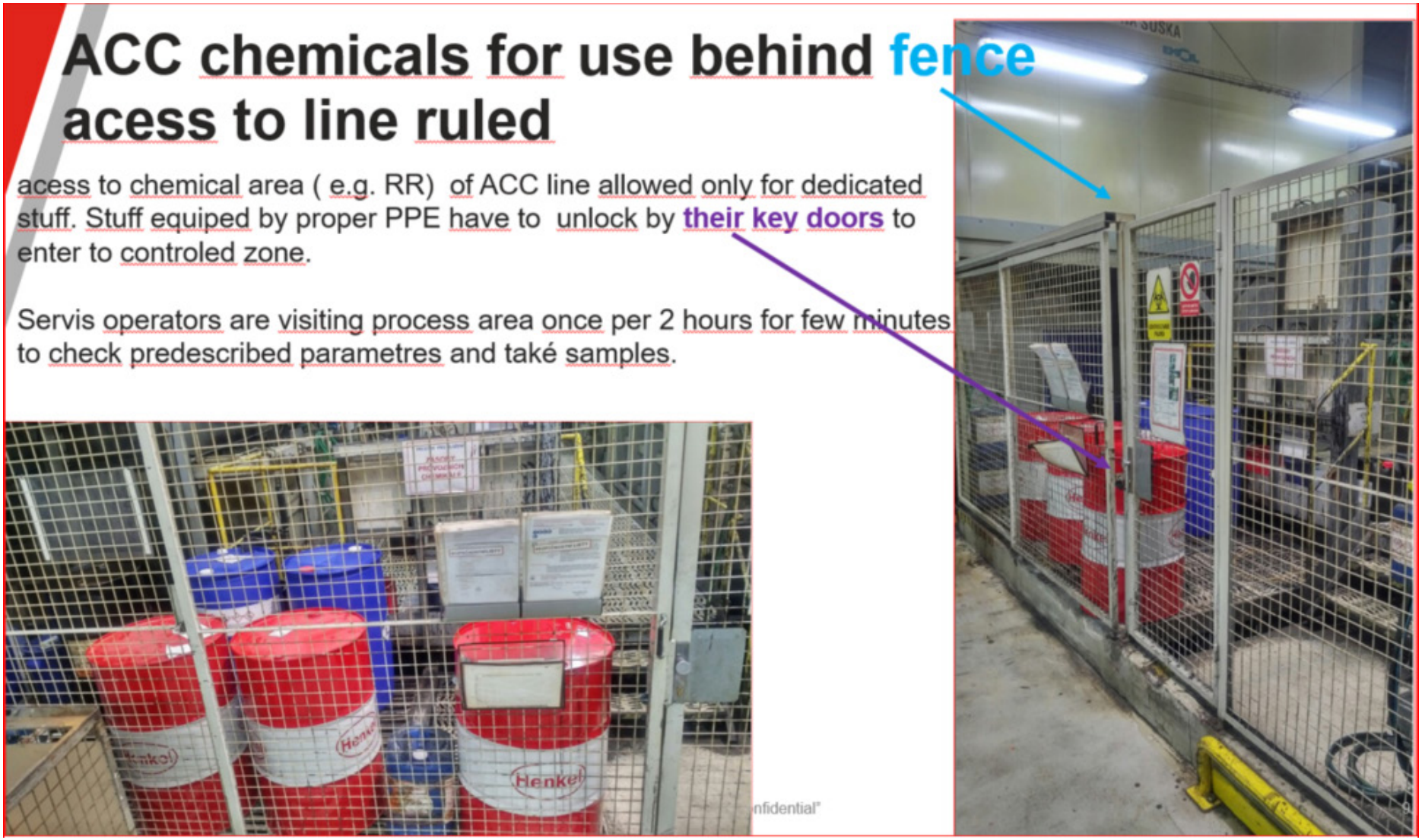

Figure A.2: Sealed containers for topping up reactive rinse bath, within fenced reactive rinse bath area. Entrance only allowed by use of key. In response to Question 5 on the CSR.

[redacted]

CBI 3

Figure A.3. Sample pages from customer specifications' standard with requirements for corrosion resistance. In response to Question 12 of SEAC

Annex B: Justification for confidentiality claims

Blanked out item reference	Justification for confidentiality
CBI 1	**Demonstration of Commercial Interest:** Proprietary manufacturing information The details of product manufacture are closely held to prevent competitors from replicating procedures and procedures conditions. These details are only shared under strong non-disclosure agreements and are not made publicly available. **Demonstration of Potential Harm:** If process information were to be revealed, competitors could try to copy the design and process, leading to loss of knowhow and market position. Even a portion of the full process information could be used to "reverse engineer" the process. **Limitation to Validity of Confidentiality:** This claim is valid indefinitely
CBI 2	**Demonstration of Commercial Interest:** Volume of sales, revenue, profits, employment and other economic information are confidential information that are only to be used for the Applicant's planning and operations. Sharing them publicly may also breach anti-trust and competition laws in the EU. **Demonstration of Potential Harm:** If competitors got hold of this information, they could use it to determine the Applicant's market share or the weight of the particular products on their overall business. Competitors could use such sensitive information to gain a competitive advantage over the Applicant. Some of the redacted information could also be used to back-calculate sensitive information. **Limitation to Validity of Confidentiality:** This claim is valid indefinitely.

CBI 3	**Demonstration of Commercial Interest:** Excerpts from an industry document, which are intended for use between the vehicle manufacturer (document owner) and the part manufacturer (the Applicant or a competitor), and cannot be publicly shared, as they contain proprietary information for the vehicle manufacturers' specifications. **Demonstration of Potential Harm:** If public, they could be accessed by that company's competitors to gain commercial advantage. **Limitation to Validity of Confidentiality:** This claim is valid indefinitely