

Handling of wear and heat resistant vehicle parts	
Systematic title based on use descriptor	SU21, AC 1/7, ERC 10a, 11a (Service life of substances in articles) SU17 (downstream use leading to inclusion in article)
2. Operational conditions and risk management measures	
No product integrated risk management measures are in place.	
2.1 Control of consumers exposure	
Product (article) characteristic	
Product Description	Cobalt containing alloys are used in vehicle parts which need to be heat and/or wear resistant. The exhaust valves of internal combustion engines are subject not only to mechanical degradation from impact and sliding stresses, but also hot corrosion by the products of combustion. Engine valves are "hardfaced" with cobalt based alloys for corrosion resistance from hot gases as well as corrosive materials such as un-burnt fuel.
Amount of substance in article	50-60% cobalt in alloy
Fraction of substance amount available for exposure	Dermal: Corroded cobalt based alloy or cobalt particles from wear, being on the surface of the part to be changed.
Amounts used	
Not applicable.	
Other given operational conditions affecting consumers exposure from article service life	
Not applicable.	
Conditions and measures at level of article production to prevent release during service life	
Not applicable.	
Conditions and measures related to information and behavioural advice to consumers	
Not applicable.	
Conditions and measures related to personal protective equipment and hygiene	
Not applicable.	
2.2 Control of environmental exposure	
Product (article) characteristic	
Cobalt can be in any form in an article.	
Amounts used	
Not applicable.	
Frequency and duration of use/exposure from service life	
Continuous use/release: 365 days/year.	
Environment factors not influenced by risk management	
Flow rate of receiving surface should be sufficiently high to dilute the effluent concentration of the STP below the PNEC (Water/ Sedimentation).	
Other given operational conditions affecting environmental exposure	
Indoor or outdoor use of products containing cobalt is possible. There are no intended Co releases due to wide dispersive use and the non-intended releases are negligible and pose no threat to the environment.	
Conditions and measures related to municipal sewage treatment plant	
Presence of municipal sewage treatment plant.	
Conditions and measures related to disposal of articles at end of service life	
Fraction of daily/annual use expected in waste: 60% of all articles, 40% is recycled. (EC, 2010) Appropriate waste codes: 20 01 34; 20 01 33; 20 01 40; 20 03 01; 20 03 07 Suitable Disposal: Waste from end-of-life articles can be disposed of as municipal waste, except when they are separately regulated, like electronic devices, batteries, vehicles, etc. Disposal of wastes is possible via incineration (Directive 2000/76/EC) or landfilling (BAT Reference Document 2006, Council Directive 1999/31/EC and Council Decision 19/12/2002).	
Conditions and measures related to recovery of articles at the end of service life	
Shredders pre-treating metal wastes maximum release factors to air of 0.0015 after RMM and no releases to water and soil.	

3. Exposure estimation and reference to its source	
Human exposure prediction	
Exposure route	Exposure assessment instrument/tool/method
Oral	Qualitative assessment. Oral exposure does not occur as part of the intended product use or reasonable foreseeable misuse.
Dermal	Negligible. Qualitative assessment. Dermal contact to a few occasions. As such, exchange of heat or wear resistant vehicle parts by consumers are not expected to produce significant exposures to cobalt. Furthermore, the cobalt wear particles accessible are assumed to be cobalt oxides which have shown a very low bioaccessibility potential in artificial perspiration and no or only a low sensitising potential.
Inhalation	Qualitative assessment. Inhalation exposure is insignificant due to the extremely low vapour pressure of cobalt. Abrasive task forming cobalt dust will not take part during handling/exchange of these vehicle parts.
Environmental exposure prediction	
Note: The measures reported in this section have not been taken into account in the exposure estimates related to the exposure scenario above. They are not subject to obligation laid down in Article 37 (4) of REACH. Thus, the downstream user is not obliged to i) carry out an own CSA and ii) to notify the use to the Agency, if he does not implement these measures.	
4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES	
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