ECHA's third Recommendation for the inclusion of substances in Annex XIV of REACH – Structured Response Template

Part 1 - Respondent information

Company	ERAMET SA
Contact Details of Respondent/s (name, job title, address, email address etc)	Marcel VADROT marcel.vadrot@erametgroup.com

Substance	**Cobalt dichloride**
CAS number	7646-79-9
Use/s (*e.g. surface treatment*)	**Manufacture of CoCl2 and** **Use of CoCl2 as intermediate in synthesis of other inorganic cobalt compounds.**

Part 2 – General Comments on the Background Documentation, including the recommendation for prioritisation.

When reviewing background documentation please comment on ALL errors, clarifications and omissions (e.g. all uses of cobalt salts relevant to responding companies should be detailed)

Section	**Comment**
2.1 Intrinsic properties	/
2.2.1 *Volume(s) imports/exports*	/
2.2.2.1 Manufacture and releases from manufacture	*Page 2, Paragraph 4:* "0.05–50 mg/m3 (IARC 2006, in the Netherlands, 2010; not mentioned, but assumed that concentration refers to Co2+)": Russia is not part of the European Union, and data from outside the EU should not be taken into account as a reference for the sites in the EU. These data do not correspond to cobalt dichloride alone but refer also to several other salts. Moreover the data do not represent the current cobalt dichloride emission levels and current technical performance in the EU. To reflect the present cobalt dichloride uses and emissions, in the EU countries where manufacture and/or import facilities are located, workplace exposure data and environmental emissions are available. All producers and users can provide recent exposure data. 68-89 µg/m3: in the study "Lison 1994," the average estimated at between 68-89 µg/m3 (measurement results cover a range of 1-7700 µg/m3). We would like to underline the fact that the 68-89 µg/m3 concentration level provided in page 2 paragraph 4 does not correspond to cobalt dichloride alone but refers also to several other salts. We therefore do not see the interest of such

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	general concentration. In addition, those data date back to 1994 and the values shown in this paragraph do not reflect the present cobalt dichloride situation. As far as our production and uses are concerned, these values do not reflect the situation in any of our French plants.
2.2.2.2 Uses and releases from uses	**Page 2, section 2.2.2.2 paragraph** This paragraph does not present a clear and accurate vision of the current uses and markets of CoCl2 in Europe, despite the numerous conclusions from industry that were provided during the public consultations. Additional information is presented in the technical study that was conducted by Entec in 2008 under contract with ECHA. (The Entec technical report (2009) presents data on the manufacture, uses, releases and alternatives to cobalt dichloride). In addition and as far as our production and uses are concerned ERAMET would like to confirm that 99% of CoCl2 produced at our two sites is used as intermediate **(see table 1 in confidential annex)**. **"Manufacture of other chemicals (e.g. cobalt carboxylates)"** When CoCl2 is used in the manufacturing of other chemicals as mentioned below, we confirm that it is used only for intermediate applications, more specifically as precursor in the manufacture of inorganic or organic salts and organic derivates of cobalt. In these applications, cobalt dichloride is not present in the final products. • **Synthesis of tyre adhesion additives**: CoCl2 is used only as an intermediate in the manufacturing of organic Cobalt derivates such as Cobalt Carboxylates and Cobalt Enolates. These derivates are used as an additive for the steel cord adhesion to the rubber in tyre. In this application, cobalt dichloride is not present in the final product. Here is a schematic diagram of CoCl2 used in the synthesis of adhesion additives for tyres. **(see figure 1 in confidential annex)** • **Synthesis of drying agents for paints**: CoCl2 is used only as intermediate especially as precursor in the manufacturing of cobalt oxides or cobalt dihydroxide, which will be transformed into Cobalt Carboxylates. These carboxylates are used for the manufacturing of a final cobalt containing substance. This final product is used as drying agent for paints. In this application cobalt dichloride is not present in the final product. Here is a schematic diagram of CoCl2 used in the synthesis of drying agent for paints **(see figure 2 in confidential annex).**

Section	Comment
	• **Manufacture of cobalt metal micronic powders for cutting tools:** CoCl2 is used only as intermediate especially as precursor in the synthesis of an inorganic cobalt compound, which is then used to manufacture cobalt metal micronic powders for cutting tools such as diamond tools and cemented carbide. In this application cobalt dichloride is not present in the final product. Here is a diagram of CoCl2 used in the manufacturing of cobalt metal micronic powders for cutting tools **(see figure 3 in confidential annex).** • **Organic textile dyes** (cobalt complexes of azo-dye derivates; the Netherlands, 2010): we have no specific knowledge on this use, but we would like to underline that this application might concern Cobalt acetate and not CoCl2. Information from a DU confirms that about 110 t/year of cobalt acetate is used as a polymer dye. • **Inorganic pigments & frits, glass, ceramic ware, varistors and magnets:** CoCl2 is used only as intermediate especially as precursor in the manufacturing of cobalt oxides or cobalt dihydroxide. These cobalt oxides or cobalt dihydroxides are transformed by calcination into oxides used as pigments for « frits, glass, ceramic ware, varistors and magnets ». In this application cobalt dichloride is not present in the final product. It should be noted that the majority of pigments producers directly use Cobalt oxides in the manufacturing of pigments. • **Humidity indication applications, according to information from stakeholder consultation:** This use is not registered under REACH due to the absence of this professional sector on EU market (no data, no market). Our downstream users do not use cobalt dichloride as humidity indicator and according to our information cobalt dichloride has been substituted for this application. **Other applications :** • **"Cobalt dichloride is used as catalyst in the manufacture of pharmaceuticals**": we would like to underline that CoCl2 is not used as catalyst in the manufacture of pharmaceuticals. In fact, CoCl2 is used only as intermediate especially as precursor in the manufacture of vitamin B12. These pharmaceutical uses are medical uses which are exempted from the REACH regulation as per article 2 paragraph 5 of REACH. • As mentioned by the CDI (RCOM, 2008), we confirm that cobalt dichloride is not used as a catalyst in organic reactions such as hydro-

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	genation and desulphurisation. Cobalt metal and other inorganic cobalt compounds are used for this purpose. • **Khol products** (concentrations between 0.11 and 51 mg/kg): this concentration of 0.11-51 mg / kg is not cobalt dichloride. Cobalt dichloride is not added intentionally to Khol product. Cobalt is present in khol product as a naturally occurring impurity, in trace amounts, in this mineral. • **Cosmetic henna products** (concentrations between 0.59 and 1.1 mg/kg): henna is a vegetable product containing traces of cobalt: the concentration of 0.59-1.1 mg / kg is not cobalt dichloride. Cobalt dichloride is not added intentionally to Henna products. Cobalt is present in this product as a natural trace element. **Volumes and uses page 5**: see confidential table 1 in annex. **Releases from uses page 5 -6:** *Page 5 paragraph 8, Workplace exposure limit:* We would like to inform you that there is new information from recent testing which supports a DNEL of 0.04 mg/m3 for the carcinogenicity of cobalt and cobalt compounds. This limit value was used as reference in developing the cobalt dichloride exposure scenarios and CSR included in the REACH registration dossier. ERAMET complies with this limit. *Page 6 paragraph 2,* "for example surface treatment is an activity carried out by numerous small and medium enterprises (SME), therefore a significant amount of workers may be exposed to this substance, with the chemical risk control in SME in Europe to be poor according to a number of reports": We would like to underline the fact that specific exposure scenarios were developed for surface treatment usage. They implement a number of adequate risk control measures allowing a safe use of CoCl2 in the surface treatment application. In addition, CoCl2 being a CMR compound, all the uses must comply with EEC regulations since 1998 [Directive 98/24/CE directive] then in 2004 [Directive 2004/37/CE], and French regulations since 2001 [2001/97 Legislative Decree]. In France, these texts were enforced by the French authority DRIRE, which has now become DREAL, and is in charge of REACH enforcement as well.

Section	Comment
2.2.2.3 Geographical distribution and conclusions in terms of (organisation and communication in) supply chains	/
2.3 Availability of information on alternatives	• **Alternative substance/technique in the synthesis of cutting tools:** In the last twenty years many academic and industrial research aiming at substituting or at least minimizing the amount of cobalt in the cutting tools have taken place. However no satisfactory alternative substance or technique which meets the following points was found: ➢ Mechanical properties: Cobalt is used as a binder in the manufacture of cemented carbides and diamond cutting tools for its outstanding mechanical properties (hardness, stiffness, toughness, wear resistance and impact resistance) but also for specific reasons of high temperature compatibility with tungsten carbide. These parameters are very difficult to satisfy and except cobalt there is no credible material to meet these parameters simultaneously. Cobalt was replaced to some extent by nickel, copper and iron but with a much lesser end result (requested properties of the tools were not satisfactorily fulfilled). ➢ Particle size (manufacturing of micronic powder): The manufacturing of cutting tools needs micronic cobalt powders from 1 to 5 microns in order to provide the needed mixing quality and sintering activity. It is important to note that such metal powders cannot be obtained by crushing or other mechanical techniques. The only method giving micronic powders which find application as a binder in the manufacture of cemented carbides and diamond cutting tools is chemical reduction of salt or metal oxide prepared by hydrometallurgical processes. Therefore a soluble salt is essential and only a controlled precipitation of this soluble salt enables the synthesis of a cobalt inorganic compound with the proper microstructure for the manufacture of micronic cobalt powder. • **Alternative substance/technique in the synthesis of additives for steelcord adhesion to rubber in tyre:** Based on the information received from our customers and considering the level of quality and performance required, we can confirm that neither alternative substances nor alternative techniques to cobalt dichloride were identified in the manufacturing of other substances such as organic or inorganic compounds.

Section	Comment
2.4 Existing specific Community Legislation relevant for possible exemption	We would like to recall that other community legislation exists. For example the French regulation N° 2001-97 lays down specific rules for the prevention of carcinogenic, mutagenic or toxic for reproduction (CMR regulation) risk for any use of CMR products. Also suspected CMR are under other regulatory requirements (Regulation 2003-1254 of 23 December 2003 on the prevention of chemical risks). In Europe, all the activities related to the use of CMR compounds must comply with EEC regulations since 1998 : Directive 98/24/CE directive then in 2004 Directive 2004/37/CE.
2.5 Any other relevant information (e.g. for priority setting)	/
3.1 Prioritisation Specifically, please comment on: • Verbal Argumentative Approach • Scoring Approach • Conclusion (e.g. regulatory effectiveness)	**Scoring Approach - Release = 3** In the table at page 8 of the "Draft background document for cobalt dichloride", we do not agree with the release score which represent, as written, "risk of significant and potentially uncontrolled exposure". About 99% of Cobalt dichloride is produced and used as a solution in a closed and an automated process (closed reactors and closed pumps). Also according to the regulation (EC) No 1272/2008, Cobalt dichloride is classified as a carcinogen category 1B by inhalation, mutagen category 2 and toxic for reproduction category 1B and all sites have to comply with the regulatory requirements on the protection of workers concerning CMR substances. On the other hand it should be noted that the small portion of the production and use involving cobalt dichloride in uses which can potentially be dispersive such as the use "humidity indicator" were, to our best knowledge, substituted. Therefore the release score of 3 seems to be excessive in relation to the CMR classification of CoCl2 which ensures it is safely produced and used (largely as a solution). We would like to underline that this scoring approach does not represent the current industry reality regarding the uses of cobalt dichloride and we think that cobalt dichloride should have a lower priority score (no more than 1). **Page 8 : Conclusion, taking regulatory effectiveness considerations into account** *Page 8 last paragraph:* "As there are other cobalt (II) compounds on the Candidate List that could replace the substance in at least some of its uses, these other cobalt (II) compounds should be grouped with the substance and included in Annex XIV as well. Therefore, it is proposed to recommend cobalt dichloride for inclusion in Annex XIV." This conclusion is not in line with previous conclusions presented in the ECHA report relative to "Verbal argumentation approach"

Section	Comment
	and "Scoring approach". Both conclude that the CoCl2 has "a moderate priority". Moreover with ERAMET's current industrial process we can not use anything else than CoCl2.

Any other comments on the draft Background documentation	Given the fact that about 99% of the use of CoCl2 produced at ERAMET plants is as intermediate or as medical use (as illustrated in our previous and present contribution to the public consultation) and the fact that the notion of intermediate has been subject to an evolving interpretation, we would suggest for the sake of legal certainty that ECHA confirms the following statement : • Use of CoCl2 solution as intermediate especially as a precursor to manufacture organic cobalt compounds for the synthesis of tyre adhesion additives and • Use of CoCl2 solution as intermediate especially as a precursor in the synthesis of an inorganic cobalt compound which is then used to manufacture cobalt metal micronic powders for cutting tools and • Use of the cobalt dichloride solution as intermediate especially as precursor in the synthesis of the vitamin B12 (a medical use) Would be exempted from the authorization process, should CoCl2 be listed on annex XIV. We provide as confidential annex (Table 2) a summary of cobalt dichloride quantities produced and used by ERAMET and its DU's which are not subject to the authorisation process (confidential market information).

Part 3 –Chemical inter-changeability (mutual substitution) of cobalt salts

The prioritisation of a group of five cobalt salts is considered to be on the basis of "Regulatory Effectiveness". This is because ECHA assume that the salts can be employed inter-changeably across uses/application.

Comments relating to chemical inter-changeability • e.g. are uses ascribed to individual salts in background documents correct? • Is the assumption of mutual substitution valid? If so, in which applications. If not, what chemical/process/economic reasons are there to argue against this assumption?	*Page 7 paragraph 2*: Our industrial process is designed for cobalt dichloride therefore we can not use anything else than the CoCl2. The interchangeably does not make any economic sense for our activity: to switch from cobalt dichloride to another cobalt salt, our plant has to be redesigned. According to our best knowledge, the vast majority of CoCl2 uses does not allow for mutual substitution of the cobalt salts for technical reasons.

Part 4 – Candidates for Exemption and Continued Use

Provide brief details (including rationale) of your company's specific use/s of cobalt salts that you consider should be **exempt** from Authorisation. Please consider both "general" and "use-specific" exemptions, including limits for PPORD (see accompanying factsheet on exemptions to authorisation under REACH).	A summary of cobalt dichloride produced and used by ERAMET and its DU's which is not subject to the authorisation process is presented in **the table 2** of the confidential annex.
Provide brief details of any of your company's uses of cobalt salts that are potentially candidates for **continued use** under Authorisation (i.e. would require an authorisation to be granted)	/

Part 5 – Timetable for Authorisation

Comments on the proposed dates for transitional arrangements (i.e. application and sunset dates)	/
Comments on the review periods for specific uses	/

Part 6 – Other comments

Any further comments on the ECHA Annex XIV Consultation	We are convinced that CoCl2 should not be included in the list of annex XIV because of the following reasons: • About 99% of the CoCl2 that is produced by ERAMET plants is used for intermediate applications especially as precursor in the manufacturing of other substances and about 3% is used in the synthesis of vitamin B12 (medical application). These uses are therefore exempted from the authorisation process. • We would like to underline that we can not use anything else than CoCl2 in our industrial processes. • As underlined by ECHA the substance has a moderate priority and we believe that CoCl2 should have a lower score: as illustrated in the current market situation and in relevant references to releases, the CoCl2 uses are controlled under existing community legislation and specific exposure scenarios were developed in the REACH Dossier Chemical Safety. In addition the Entec report supports that a score of 6 would be more appropriate for cobalt dichloride than the 10 currently proposed for the purposes of prioritisation.