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Background document for ammonium dichromate

Document developed in the context of ECHA's third Recommendation for the inclusion of substances in Annex XIV

Information comprising confidential comments submitted during public consultation, or relating to content of Registration dossiers which is of such nature that it may potentially harm the commercial interest of companies if it was disclosed, is provided in a confidential annex. This confidential annex is not included in the public version of this background document.

1. Identity of the substance

Chemical name:	ammonium dichromate
EC Number:	232-143-1
CAS Number:	7789-09-5
IUPAC Name:	ammonium dichromate

2. Background information

2.1. Intrinsic properties

Ammonium dichromate was identified as a Substance of Very High Concern (SVHC) according to Article 57(a), (b) and (c) as it is classified according to Annex VI, part 3, Table 3.1 (the list of harmonised classification and labelling of hazardous substances) of Regulation (EC) No 1272/2008 as a carcinogen category 1B[1] (H350: "May cause cancer"), as mutagen category 1B[2] (H340: "May cause genetic defects") and as toxic for reproduction category 1B[3] (H360-FD:

[1] This corresponds to a classification as carcinogen category 2 (R45 : May cause cancer) in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) N° 1272/2008

[2] This corresponds to a classification as mutagen category 2 (R46 : May cause heritable genetic damage) in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) N° 1272/2008

[3] This corresponds to a classification as toxic for reproduction category 2 (R60-61: May impair fertility. May cause harm to the unborn child) in Annex VI, part 3, Table 3.2 (the list of harmonised classification and labelling of hazardous substances from Annex I to Directive 67/548/EEC) of Regulation (EC) N° 1272/2008

"May damage fertility. May damage the unborn child"), and was therefore included in the candidate list for authorisation on 18 June 2010, following ECHA's decision ED/30/2010.

2.2. Imports, exports, manufacture and uses

2.2.1. Volume(s), imports/exports

According to the Risk Assessment Report (RAR), ammonium dichromate was manufactured in quantities of 850 t in the EU in 1997 (EC, 2005). Communication with industry indicated a significantly lower EU production volume in 2004 (reference cited in RPA, 2005).

There is no indication that there is any manufacture of ammonium dichromate in the EU. The substance has been registered as transported isolated intermediate in the tonnage band 1 – 1,000 t/y.

The tonnage allocated to uses within the scope of authorisation is presumably < 1 t/y (no registration of uses that would appear to be in the scope of authorisation, however use of small amounts of the substance in specialty applications seem to occur – see section 2.2.2.2).

2.2.2. Manufacture and uses

2.2.2.1. Manufacture and releases from manufacture

Ammonium dichromate is not produced in EU.

2.2.2.2. Uses and releases from uses

According to registration information ammonium dichromate is used as intermediate in the synthesis of fine and bulk large scale chemicals. Furthermore it is used as laboratory chemical.

France stated that they received contradictory information on the use of ammonium dichromate in metal finishing. According to the French Metal Finishing Trade Union ammonium dichromate was used to prepare ~ 2 % of treatment baths in metal finishing workshops in 2004 (Annex XV, 2010). During public consultation one company stated that it uses the substance for the chromating of parts of aircrafts made from magnesium (RCOM, 2011). This cannot be confirmed by registration information.

Another company indicated to use ammonium dichromate as photo sensitizer (as 1% aqueous solution of ammonium dichromate) for etching metal foils which are used e.g. in automotive industry, chemical industry, medical and environmental technology. Quantities involved are assumed to be very low (RCOM, 2011).

The substance seems also to be used in very low amounts for scientific research and development (SRD) (RCOM, 2011).

In conclusion, no uses within the scope of authorisation could be identified from registration information. There are indications of uses which would potentially fall under the scope of authorisation (chromating, foil etching), however these seem to be very minor in terms of the quantity of ammonium dichromate involved.

2.2.2.3. Geographical distribution and conclusions in terms of (organisation and communication in) supply chain

No data available.

2.3. Availability of information on alternatives[4]

Not available.

2.4. Existing specific Community legislation relevant for possible exemption

There seems to be no specific Community legislation in force that would allow to consider exemption of (categories of) uses from the authorisation requirement on the basis of Article 58(2) of the REACH Regulation (see sections 'D' and in particular 'E' of RCOM, 2011).

2.5. Any other relevant information (e.g. for priority setting)

Not available.

[4] Please note that this information was not used for prioritisation.

3. Conclusions and justification

3.1. Prioritisation

No significant use identified in the scope of authorisation.

Verbal-argumentative approach

On the basis of the criteria the substance has a very low priority for inclusion in Annex XIV.

Scoring approach

Score			Total Score
Inherent properties (IP)	Volume (V)	Uses - wide dispersiveness (WDU)	(= IP + V + WDU)
1 Art. 57 (a), (b) & (c); Carc 1B, Muta 1B, Repro 1B	0 (no registered volume in the scope of authorisation)	0 (no uses in scope of authorisation))	1

Conclusion, taking regulatory effectiveness considerations into account

On the basis of the prioritisation criteria, ammonium dichromate gets very low priority for inclusion in Annex XIV.

However, this substance could be used to replace other hexavalent chromium compounds with similar hazard profile and similar uses.

Therefore, it is proposed to recommend ammonium dichromate for inclusion in Annex XIV.

4. References

Annex XV (2010): Ammonium dichromate. Proposal for identification of a substance as a CMR Cat 1 or 2, PBT, vPvB or a sustance of an equivalent level of concern. Submitted by France, February 2010.

http://echa.europa.eu/documents/10162/8774c269-31f9-4494-a76c-6de95bea009d

EC (2005): European Union Risk Assessment Report: chromium trioxide, sodium chromate, sodium dichromate, ammonium dichromate, potassium dichromate. 3rd Priority List, Volume 53. European Commission, Joint Research Centre.

RCOM (2011): "Responses to comments" document. Document compiling comments and respective answers from commenting period 15/06/2011 – 14/09/2011 on ECHA's 3rd draft recommendation of priority substances for inclusion in the list of substances subject to authorisation (Annex XIV).

http://echa.europa.eu/documents/10162/17232/rcom_chromium_compounds_en.pdf

RPA (2005): Environmental risk reduction strategy and analysis of advantages and drawbacks for hexavalent chromium. Risk & Policy Analysis Ltd. Prepared for Department for Environment, Food and Rural Affairs. October 2005.