

1 July 2015

Background document for anthracene oil

Document developed in the context of ECHA's 6th recommendation for the inclusion of substances in Annex XIV

ECHA is required to regularly prioritise the substances from the Candidate List and to submit to the European Commission recommendations of substances that should be subject to authorisation. This document provides background information on the prioritisation of the substance, as well as on the determination of its draft entry in the Authorisation List (Annex XIV of the REACH Regulation). 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 to this document.

1. Identity of the substance

Chemical name: Anthracene oil
EC Number: 292-602-7
CAS Number: 90640-80-5
IUPAC Name: -

2. Background information for prioritisation

Priority was assessed by using the General approach for prioritisation of SVHCs for inclusion in the list of substances subject to authorisation¹. Results of the prioritisation of all substances included in the Candidate List on 20 June 2013 or before and not yet included or recommended in Annex XIV of the REACH Regulation is available at http://echa.europa.eu/documents/10162/13640/prioritisation_results_6th_rec_en.pdf

The prioritisation results of the substances included in the draft 6th recommendation have been updated as necessary after the public consultation. The updated results are available at http://echa.europa.eu/documents/10162/13640/updated_prioritisation_results_6th_axiv_rec_en.pdf.

2.1. Intrinsic properties

Anthracene oil was identified as a Substance of Very High Concern (SVHC) according to article 57 a, d and e of Regulation (EC) No 1907/2006 (REACH) and was therefore included in the Candidate List for authorisation on 13 January 2010, following ECHA's decision ED/68/2009.

Anthracene oil is classified in Annex VI, part 3, Table 3.1 (the list of harmonised classification and labelling of hazardous substances) of Regulation (EC) No 1272/2008 as Carcinogenic, Category 1B, H350 ("May cause cancer"). This classification does not apply if it can be shown that the substance contains less than 0.005 % (w/w) benzo[a]pyrene (EINECS No 200-028-5).

¹ Document can be accessed at http://echa.europa.eu/documents/10162/13640/gen_approach_svhc_prior_in_recommendations_en.pdf

In addition, on the basis of the PBT and/or vPvB properties of its PAH-constituents, anthracene oil fulfils the PBT and the vPvB criteria according to article 57 d and e of the REACH Regulation.

2.2. Volume used in the scope of authorisation

The amount of anthracene oil manufactured and/or imported into the EU is according to registration data² > 100,000 t/y.

One sector association commenting during the public consultation on the draft 6th recommendation (ComRef, 2015) indicates an annual volume of 195,000 t/y (assumed to correspond to the annual tonnage for use in the EU).

Some uses appear not to be in the scope of authorisation, such as the use as intermediate in the production of carbon black.

Based on available information in the registrations regarding the volume for uses in the scope of authorisation (e.g. formulation and use of coatings, paints, waterproofing materials and sealants, use as absorbent and as industrial solvent, uses for refractories) the volume in the scope of authorisation is estimated to be > 10,000 t/y.

2.3. Wide-dispersiveness of uses

Registered uses of anthracene oil in the scope of authorisation include:

- uses at industrial sites,(e.g. use in the metallurgic smelting, for refractories, use in coatings, paints, waterproofing materials and sealants, use as absorbent for industrial gas cleaning (scrubber), use as as industrial solvent), and
- uses by professional workers (use in coatings, paints, waterproofing materials and sealants).

Furthermore, according to registrations the substance is used in articles (e.g. as component in tar paints for special application (e.g. underwater corrosion protection) and component of waterproof membranes for roofing and other sealing purposes (Annex XV report (2009)) in volumes > 10 t/y.

² Registration information last consulted on 1 December 2014

2.4. Conclusions and justification

Verbal descriptions and Scores			Total Score
Inherent properties (IP)	Volume (V)	Wide dispersiveness of uses (WDU)	(= IP + V + WDU)
<p>Anthracene oil is classified as carcinogenic Cat. 1B and it is identified as PBT and vPvB (meeting the criteria 57 a, d and e)</p> <p>Score: 15</p>	<p>The amount of anthracene oil used in the scope of authorisation is estimated to be above 10,000 t/y</p> <p>Score: 15</p>	<p>Anthracene oil is used at industrial sites and by professional workers.</p> <p>Initial score: 10</p> <p>Furthermore, the substance is used in articles in volumes > 10 t/y.</p> <p>Refined score: 12</p>	42

Conclusion

On the basis of the prioritisation criteria, anthracene oil receives high priority among the substances in the Candidate List (refer to link to the prioritisation results above). Therefore, anthracene oil is recommended for inclusion in Annex XIV.

3. Further information on uses

Registered uses of Anthracene oil includes:

- Formulation steps in different industrial sectors such as:
 - in the aluminium and/or Calcium carbide industry (formulation of green anodes and briquettes, collar pastes)
 - in the refractory supply chain (formulation of green unshaped and shaped refractory products, impregnation of refractory products)
 - in the carbon and graphite industry (Formulation of green pastes (e.g. ramming paste, lining paste, etc); formulation of green cathodes, lining blocks and briquettes)
 - in the production of carbon black (blending with other coal tar oils and/or pitch)
 - for the formulation of paints, coatings, sealant and waterproofing materials
 - for the formulation of fuel
 - In the metallurgic industry (In mixtures with coal tar oils for Chemical reduction at iron production into blast furnace)
 - In mixtures for the production of pure substances
- Industrial end-uses such as:
 - in the aluminium industry and/or Calcium carbide industry (black anodes production; aluminium production by the prebaked method; aluminium production by the Söderberg method)
 - in the refractory supply chain (production of tempered shaped refractory products; end-use of green refractory products)
 - in the carbon and graphite industry (production of black cathodes and lining blocks)
 - in the active carbon supply chain (production of tempered active carbon

- products)
 - In the metallurgic industry (In mixtures with coal tar oils for Chemical reduction at iron production into blast furnace; for the production of metals and metal alloys)
 - In the production of carbon black
 - use of paints, coatings, sealants and waterproofing materials
 - use as absorbent for industrial gas cleaning (scrubber) or industrial solvent
 - use as fuel / for industrial energy production
 - In mixtures for the production of pure substances
- Professional end-uses such as the use of paints, coatings, sealants, waterproofing materials and adhesives

Furthermore the service life step is relevant due to the incorporation of anthracene oil on/in articles where used e.g. in paints, coatings or sealants.

In registrations, uses are described by mean of the so-called 'use descriptors'. The Environmental Release Categories (ERCs) provide information on whether the use described can be considered intermediate: ERC6a (industrial use resulting in manufacture of another substance (use of intermediates)) is to be used for the description of intermediate uses.

The following uses are reported with ERC6a:

- in the aluminium industry and/or Calcium carbide industry: black anodes production
- in the refractory supply chain: production of tempered shaped refractory products
- in the carbon and graphite industry: production of black cathodes and lining blocks
- in the active carbon supply chain: production of tempered active carbon products
- production of carbon black
- in the production of pure substances
- In the metallurgic industry (In mixtures with coal tar oils for Chemical reduction at iron production into blast furnace;

Other uses are reported using ERCs incompatible with the description of intermediate uses³ (use as absorbent for industrial gas cleaning (scrubber) or industrial solvent; production of metals and metal alloys in the metallurgic smelting industry; aluminium production by the prebaked method; aluminium and calcium carbide production by the Söderberg method, end-use of green refractory products).

Further information on uses and on tonnage per uses has been provided by one industry association during the public consultation on ECHA's 6th recommendation (ComRef, 2015) and is summarised in Table 1 below. In addition to the registered uses listed above, anthracene oil appears to be used for creosote production (a heavy-duty preservative to protect wood from biological attack (BPR BT8)). According to the comment submitter all the industrial uses of anthracene oil except the uses as industrial solvent and in heavy-duty corrosion protection are generically exempted from the authorisation requirement (intermediate uses, uses exempt according to Art. 56(4)) and the total tonnage for uses in the scope of authorisation is considered to be 6,000 t/y.

³ e.g. ERC6b (industrial use of reactive processing aids)

Table 1: Summary of anthracene oil uses and and tonnage per use (Source: public consultation on the draft 6th recommendation; ComRef, 2015)

Uses	Volume (t/y)
Intermediate in the manufacture of carbon black	113,000
Intermediate in the manufacture of pitch coke	13,000
Intermediate in the manufacture of other substances	19,000
Use as fuel (exempt according to Art. 56(4)(d) (fuel))	Not reported
Use of AO for creosote production (exempt according to Art. 56(4)(b) (biocide))	44,000
Use as industrial solvent	5,000
Use as binder for solids in heavy-duty corrosion protection	1,000
Total volume (tonnes)	195,000

Discrepancies exist however between the tonnage information provided in the public consultation and in registrations. According to recent registration information (update of the lead registrant dossier of 22 April 2014) the volume of anthracene oil used for these uses considered by all parties as being in the scope of authorisation (uses as industrial solvent and in heavy-duty corrosion protection) is > 10,000 t/y. Moreover, uses are listed in the registration dossiers that are difficult to track back to the information on use and tonnage provided during the public consultation and that are considered by ECHA as likely to fall under the scope of authorisation (e.g. use in refractories).

Having correct volume and use information reported in the registrations is the responsibility of the registrants.

Based on available information ECHA's current assumption is that the difference between the 2 tonnage estimations for uses in the scope of authorisation is due to the use in refractories (and the respective assessment of this use as being within or outside of the scope of authorisation). Based on available information ECHA considers the use in refractories as non-intermediate use.

Indications have been received that uses in the manufacture/production of electrodes may potentially fulfil the definition of intermediate therefore the volume allocated to this use as not been considered for prioritisation purpose. It is recognised however that the intermediate/non-intermediate status of these uses is a complex issue, and stressed that this prioritisation exercise is not taking a formal position whether certain uses of substances are regarded as uses as intermediates in accordance with the definition in Art. 3(5).

To conclude based on registration information, the tonnage for uses in the scope of authorisation is estimated to be > 10,000 t/y (Score 15). Would it be justified to change the volume score from 15 to 12-15 the substance would remain of high priority for inclusion on Annex XIV.

4. Background information for the proposed Annex XIV entry

Draft Annex XIV entries were determined on the basis of the General approach for preparation of draft Annex XIV entries for substances to be included in Annex XIV⁴. The draft Annex XIV entries for substances included in the 6th recommendation are available at http://echa.europa.eu/documents/10162/13640/6th_axiv_recommendation_july2015_en.pdf. The section below provides background for allocation of the substance to the Latest Application Dates slots.

The LAD slots are set in 3 months intervals (normally 18, 21 and 24 months after inclusion in Annex XIV but more slots can be considered on a case-by-case basis).

Anthracene oil and pitch, coal tar, high temp. have been considered to be placed in the same slot as they may fulfil the definition of a group according to section 1.5 of Annex XI of REACH (provision allowing submitting common applications for authorisation).

Allocation of (group of) substances to LAD slots aims at an even workload for all parties during the opinion forming and decision making on the authorisation applications. All substances can therefore not be set at the same LAD. ECHA proposes to allocate those substances to the "later" LAD slots (21 months or more) for which the available information indicates a relatively high number of uses. Substances with no registration requirement are also allocated to the later slots.

Based on rough indicators (such as the number of registered uses within the scope of authorisation, number of registrants, and number and type of SVHC endpoints), processing of applications is anticipated to be of higher workload in particular for two groups of substances among the substances included in the final 6th recommendation. Those groups, comprising the two above coal-stream-substances and borates, are therefore proposed to be allocated at separate LAD slots.

For anthracene oil and pitch, coal tar, high temp., although the supply chain is not simple, preparation of an application may still require shorter time in comparison with the boron substances which have probably higher number of uses and higher (overall) supply chain complexity. Therefore, anthracene oil and pitch, coal tar, high temp. are assigned in the 2nd LAD slot (i.e. 21 months after the inclusion in Annex XIV).

5. References

Annex XV report (2009): Proposal for identification of a substance as a CMR Cat 1 or 2, PBT, vPvB or a substance of an equivalent level of concern. Anthracene oil Submitted by Germany, August 2009.
<http://echa.europa.eu/documents/10162/d0211bde-9548-43ca-8a09-87959cd5cf0f>

RCOM (2009): "Responses to comments" document. Document compiled by Germany from the commenting period 31/08/2009-15/10/2009 on the proposal to identify anthracene oil as a Substance of Very High Concern.
<http://echa.europa.eu/documents/10162/42117bd5-4e80-4d82-9412-8b6417ab3172>

ComRef (2015): "Responses to comments" document. Document compiling comments and respective answers from commenting period 01/09/2014-01/12/2014 on ECHA's proposal to include anthracene oil in its 6th recommendation of priority

⁴ Document can be accessed at

http://echa.europa.eu/documents/10162/13640/draft_axiv_entries_gen_approach_6th_en.pdf

substances for inclusion in the list of substances subject to authorisation
http://echa.europa.eu/documents/10162/13640/6th_axiv_rec_comref_anthracene_oil_en.pdf